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DRAFT ENVIRONMENTAL IMPACT REPORT

222 Second Street Office Project

PLANNING DEPARTMENT
CASE NO. 2006.1106E

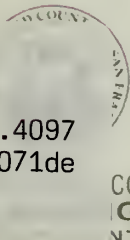
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| Draft EIR Publication Date: | January 27, 2010 |
| Draft EIR Public Hearing Date: | March 4, 2010 |
| Draft EIR Public Comment Period: | January 27 - March 15, 2010 |

Written comments should be sent to:

Environmental Review Officer | 1650 Mission Street, Suite 400 | San Francisco, CA 94103

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SAN FRANCISCO PLANNING DEPARTMENT

DATE: January 27, 2010

TO: Distribution List for the 222 Second Street Office Project EIR

FROM: Bill Wycko, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the 222 Second Street Office Project (Case No. 2006.1106E)

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

This is the Draft of the Environmental Impact Report (EIR) for the 222 Second Street Office Project. A public hearing will be held on the adequacy and accuracy of this document. After the public hearing, our office will prepare and publish a document entitled "Comments and Responses," which will contain a summary of all relevant comments on this Draft EIR and our responses to those comments, along with copies of the letters received and a transcript of the public hearing. The Comments and Responses document may also specify changes to this Draft EIR. Public agencies and members of the public who testify at the hearing on the Draft EIR will automatically receive a copy of the Comments and Responses document, along with notice of the date reserved for certification; others may receive such copies and notice on request or by visiting our office. This Draft EIR, together with the Comments and Responses document, will be considered by the Planning Commission in an advertised public meeting, and then certified as a Final EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Environmental Impact Report. The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document in addition to this copy of the Draft EIR, you will technically have a copy of the Final EIR.

We are aware that many people who receive the Draft EIR and Comments and Responses document have no interest in receiving virtually the same information after the EIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final EIR, in Adobe Acrobat format on a compact disk (CD), to private individuals only if they request them. Therefore, if you would like a copy of the Final EIR, please fill out and mail the postcard provided inside the back cover to the Major Environmental Analysis division of the Planning Department within two weeks after certification of the EIR. Any private party not requesting a Final EIR by that time will not be mailed a copy.

Thank you for your interest in this project.

222 SECOND STREET OFFICE PROJECT

Draft Environmental Impact Report

Planning Department Case No. 2006.1106E
State Clearinghouse No. 2007052113

Draft EIR Publication Date: January 27, 2010
Draft EIR Public Hearing Date: March 4, 2010
Draft EIR Public Comment Period: January 27, 2010 through March 15, 2010

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List of Acronyms and Abbreviations

| | |
|---------------------|--|
| AB | Assembly Bill |
| ABAG | Association of Bay Area Governments |
| ARB | California Air Resources Board |
| ARD/TP | Archeological Research Design and Treatment Plan |
| BAAQMD | Bay Area Air Quality Management District |
| BCDC | San Francisco Bay Conservation and Development Commission |
| BTEX | Benzene, Toluene, Ethylene, and Xylenes |
| C&D | Construction and Demolition |
| CAP | Clean Air Plan <i>or</i> Climate Action Plan |
| CDMG | California Division of Mines and Geology (now Ca. Geological Survey) |
| CEQA | California Environmental Quality Act |
| CGS | California Geological Survey |
| CHRIS | California Historical Resources Information System |
| CO | Carbon Monoxide |
| CO ₂ | Carbon Dioxide |
| CO ₂ -eq | Carbon Dioxide-equivalent |
| dB | Decibel |
| dBA | A-Weighted Decibel |
| DBI | San Francisco Department of Building Inspection |
| DEIR | Draft Environmental Impact Report |
| DPH | San Francisco Department of Public Health |
| DPM | Diesel Particulate Matter |
| DPR | California Department of Parks and Recreation |
| EIR | Environmental Impact Report |
| EPA | United States Environmental Protection Agency |
| ERO | Environmental Review Officer (of the Planning Department) |
| FAR | Floor-area ratio |
| FARR | Final Archeological Resources Report |
| FEC | Filipino Education Center |
| GW | Gigawatt (1 billion watts) |
| GWh | Gigawatt-Hour |
| GFA | Gross Floor Area |
| GHG | Greenhouse Gas |
| GSF | Gross Square Feet |
| HEPA Filter | High Efficiency Particulate Air Filter |
| IWMP | Integrated Waste Management Plan |
| KW | Kilowatt (1,000 watts) |
| KWh | Kilowatt-Hour |
| Ldn | Day-Night Noise Level |
| LEED® | Leadership in Energy Efficient Design |
| LOS | Level of Service (measure of traffic or other transportation operations) |
| mgd | Million Gallons per Day |
| MLD | Most Likely Descendant |
| mph | Miles per Hour |
| MTA | San Francisco Municipal Transportation Authority |
| MRZ | Mineral Resource Zone |
| MW | Megawatt (1 million watts) |
| NAAQS | National Ambient Air Quality Standards |
| NCT | Neighborhood Commercial-Transit (zoning district) |
| NAHC | California Native American Heritage Commission |
| NEPA | National Environmental Policy Act |

| | |
|-------------------|---|
| NO ₂ | Nitrogen Dioxide |
| NO _x | Nitrogen Oxides |
| NOP | Notice of Preparation |
| OHP | State of California Office of Historic Preservation |
| OPR | Governor's Office of Planning and Research |
| PDR | Production, Distribution, and Repair |
| PM | Particulate Matter |
| PM _{2.5} | Particulate Matter 2.5 microns or less in diameter |
| PM ₁₀ | Particulate Matter 10 microns or less in diameter |
| ppb | Parts per Billion |
| ppm | Parts per Million |
| pphm | Parts per Hundred Million |
| ROG | Reactive Organic Gases |
| SAAQS | State Ambient Air Quality Standards |
| SB | Senate Bill |
| SD | Special Development (zoning sub-district) |
| SFD | San Francisco City Datum |
| SFPUC | San Francisco Public Utilities Commission |
| SFUSD | San Francisco Unified School District |
| SMP | Streetscape Master Plan |
| SO ₂ | Sulfur Dioxide |
| TACs | Toxic Air Contaminants |
| TEP | Transit Effectiveness Project |
| TDR | Transfer of Development Rights |
| TJPA | Transbay Joint Powers Authority |
| v/c ratio | Volume-to-Capacity Ratio |
| WSA | William Self Associates (archeological consultant) |
| µg/m ³ | Micrograms per Cubic Meter |

SUMMARY

A. Project Description

The project sponsor, TS 222 Second Street, L.P., proposes to construct a 26-story, approximately 350-foot-tall office tower containing approximately 430,650 square feet of office space, at the southwest corner of Second and Howard Streets in San Francisco. The project would have office uses on floors two through 26 and approximately 4,600 square feet of retail space (assumed herein for analysis purposes to be occupied by restaurant uses) on the ground level. The ground floor would also have approximately 8,750 square feet of enclosed publicly accessible “indoor park” space to meet the project’s *Planning Code* open space requirement, the building lobby, a loading dock with two off-street freight loading spaces and one (smaller) service vehicle space, and building support space, including trash and recycling facilities. The building would be constructed to the standards required for a LEED® (Leadership in Energy Efficient Design) Gold Version 2.2 rating.

The 23,925-square-foot project site (Block 3735, Lot 63) is within the C-3-O (SD) Downtown Office (Special Development) District. Most of the site is within the 350-S height and bulk district (350-foot height limit; limits for building base height and tower plan dimensions are set forth in *San Francisco Planning Code* Section 270(d), while the northwest corner of the site is within a 150-S height and bulk district (150-foot height limit; bulk limits *Planning Code* per Section 270(d)). Because the proposed tower would extend about 25 feet into this portion of the site, the proposed project would not conform to the *Planning Code* height limit, and rezoning of this portion of the site, as well as a change in the Downtown Plan height map within the *General Plan*, would be required. The project sponsor is seeking an amendment of the height and bulk map (rezoning) of this portion of the site to a 350-S height and bulk district, consistent with the remainder of the project site. Rezoning and a *General Plan* map amendment require approval from the Board of Supervisors upon a favorable recommendation from the Planning Commission. With the use of transferrable development rights, the proposed project would have a floor area ratio of 18:1, the maximum permitted in the C-3-O (SD) Use District.

The site is currently occupied by a surface parking lot. As part of the project, the sponsor proposes to acquire and incorporate into the project site a 1,650-square-foot (20-foot-by-82.5-foot) portion of the adjacent property (Block 3735, Lot 5), which would increase the size of the project site to 25,575 square feet, and to demolish the existing loading dock at 631 Howard Street, which occupies the portion of the adjacent parcel to be acquired. The existing building at 631 Howard Street would remain.

Two basement parking levels would be provided beneath the project site, with access provided via a two-way driveway from Tehama Street for a total of 54 marked parking spaces, with capacity for

approximately 80 vehicles with valet parking. The basement would also include approximately 46 bicycle parking spaces, which would exceed the 12 spaces required by the *Planning Code*. Three additional service van spaces would also be provided in the basement.

As proposed, the project would be a rectilinear tower of diminishing bulk from the building base to a height of approximately 350 feet. At the fifth floor, the north façade of the building would be set back 5 feet from Howard Street and the west façade would be set back approximately 20 feet from the westerly property line. At the 17th story, the east façade would be set back 24.5 feet from Second Street, and the south façade would be set back 44.5 feet from Tehama Street. In addition, the fifth floor would include a further 5-foot recess, or “reveal,” on all four facades, intended to emphasize a visual break above the first four stories of the building—at a height of about 60 feet—and thereby establish a sense of continuity with nearby historic structures. Assuming the increase in the size of the project site, the proposed building would occupy approximately 90 percent of the site. The setbacks would generally be consistent with the direction for building massing contained in the Downtown Plan element of the *San Francisco General Plan*; however, bulk exceptions would be required because the project would not meet certain bulk limits established in *Planning Code* Section 270(d) for floor plates and horizontal dimensions of the lower tower, as defined by the *Code* (i.e., above 103 feet in height). (The upper tower (above 220 feet) would comply with the *Code*.)

The project would be consistent with the *Planning Code* with respect to off-street parking and loading, bicycle parking, and open space. In addition to building bulk, *Code* exceptions would be required with respect to ground-level winds and sidewalk shading.

The proposed 222 Second Street project would be consistent with the draft Transit Center District Plan, as published in November 2009, with respect to both land use and building height, as well as with most other policy direction. This proposed Plan for the area around the Transbay Terminal—roughly bounded by Market Street, The Embarcadero, Folsom Street, and Third Street—sets forth a number of goals that generally include increasing the amount of allowable development in the transit-rich downtown core, while at the same time improving public amenities, modifying the system of streets and circulation to meet the needs and goals of a dense transit-oriented district, providing additional open space, implementing policies to preserve existing historic structures, and enhancing sustainability.

The project would be clad in an energy efficient insulated glass unit curtain wall, with vertically oriented, overlapping glass panels and internal horizontal metal rails. The ground floor exterior would be differentiated by a pattern of larger, clear glass panels, including sliding doors to the public open space, set off by wide columns and a belt course. The proposed project would be constructed atop a concrete mat foundation. Excavation would require removal of approximately 240,000 cubic yards of soil, and would extend to a maximum depth of about 30 feet below grade.

Project construction would take about 21 months, and occupancy is anticipated in 2013. Construction costs are currently estimated at approximately \$100 million. The project architect is Heller Manus of San Francisco, in association with Thomas Phifer and Partners of New York.

Implementation of the proposed project would require the following approval actions:

Planning Commission

- Recommendation for amendment of *Planning Code* height and bulk map (rezoning) and Downtown Plan (*General Plan*) height map to increase height limit to 350 feet across site.
- Approval of the project under *Planning Code* Section 309, including exceptions with regard to building bulk (Section 270), ground-level winds (Section 148), and the required setback to minimize shadow on Second Street (Section 146).
- Allocation of office space under *Planning Code* Section 321 (Office Development Annual Limit).

Board of Supervisors

- Amendment of height and bulk map (rezoning) to increase height limit to 350 feet across site.
- *General Plan* map amendment to increase height limit to 350 feet across site.

Department of Building Inspection

- Demolition, site, and building permits.

Department of Public Works

- Street Space Permit from the Bureau of Street Use and Mapping for use of a public street space during project construction (for a pedestrian walkway)

Municipal Transportation Agency

- Special Traffic Permit from the Department of Parking and Traffic for use of a public street space during project construction (for a pedestrian walkway)

B. Environmental Impacts and Mitigation Measures

This EIR analyzes the potential effects of the proposed 222 Second Street project, as determined in the Notice of Preparation of an Environmental Impact Report (NOP), issued May 19, 2007 (Appendix A of this EIR). The project analyzed in this EIR differs from the project described in the NOP, in that the massing is rectilinear, whereas the project described in the NOP would have been an irregularly shaped eight-sided polyhedron in plan view. However, the height of the proposed building remains the same—350 feet—as does the amount of office space. The remainder of the development program (ground-floor retail/restaurant space, lobby, parking and loading) is similar to that described in the NOP.

This EIR contains detailed analyses of topics including land use, aesthetics, population and housing, cultural (historical and archaeological resources), transportation, noise, air quality, wind, and shadow. Table S-1 presents a summary of the significant adverse environmental effects and mitigation measures identified in the EIR, along with mitigation measures identified to reduce those impacts to a less-than-significant level, where applicable.

TABLE S-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|--|-----------------------|--|---------------------------------------|
| 1. SIGNIFICANT IMPACTS | | | |
| D. Cultural Resources | | | |
| CP-1: The proposed project could result in damage to or destruction of as-yet unknown archaeological remains, should such remains exist beneath the project site. | Significant | <p>M-CP-1: Archeological Research Design and Treatment Plan. Based on a reasonable presumption that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of a qualified archeological consultant having expertise in California prehistoric and urban historical archeology. The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (ERO). All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO.</p> <p>Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines Sections 15064.5 (a) and (c).</p> <p><i>Archeological Testing Program.</i> Evidence of prehistoric settlement has been discovered in the project vicinity, such as the prehistoric midden sites CA-SFR-135 and CA-SFR-112. The archeological deposits associated with prehistoric settlement include shellmound deposition, prehistoric flaked-stone, ground stone, shell, and bone artifacts, house floors, and human remains. Previous archeological and geotechnical boring indicate that a marsh deposit, characterized by a reddish-brown to orange-brown organic sandy clay layer (3-10 ½ feet thick), is located 18 feet to 28 feet below ground surface. Although there has been no indication this layer contains evidence of cultural materials, i.e., shell, fire-affected rock, bone, or culturally developed soils, its depth is consistent with buried prehistoric midden sites in the vicinity. Since it is impractical to conduct additional archeological testing through trench excavations to the depths of potential prehistoric deposits, archeological monitoring shall be conducted during construction-related excavations in depths between 18 and 28 feet below surface, as discussed below.</p> <p><i>Archeological Monitoring Program.</i> Archeological monitoring shall be carried out during the excavation of soils between 0 feet and 31 feet below the present (pre-construction) ground surface. Soils below 31 feet are not expected to contain cultural remains, as these depths would likely pre-date human occupation.</p> | Less than Significant |

**TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT**

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|--------------------------------------|-----------------------|--|---------------------------------------|
| D. Cultural Resources (cont.) | | | |
| CP-1 (cont.) | | <p>All aspects of the Plan shall be administered by William Self Associates (WSA)'s Principal Investigator, who possesses the academic background and experience for historic archeological research defined in the Secretary of the Interior's Professional Qualifications Standards CFR 66, Appendix C, (48 FR 44738-9) and is certified by the Register of Professional Archeologists.</p> <p>The Field Archeologist(s) shall report on a daily basis to the project's Construction Manager. Requests for archeological work to be conducted within the excavation area shall be directed to the Construction Manager. Prior to the commencement of construction, the Construction Manager(s) shall be provided with training in the various types of cultural material or features expected to be encountered during project excavations. Training shall be conducted or supervised by WSA's Principal Investigator.</p> <p>At the discretion of the Principal Investigator and in consultation with the San Francisco Environmental Review Officer (ERO), a Field Archeologist shall be on-site during excavation of soils or strata likely to contain cultural materials. All excavation and trenching with backhoe or bulldozer that are conducted in levels thought to potentially contain cultural material be monitored. Based on data recovered through archeological testing, historic cultural material may be encountered immediately below the foundations of the most recent structures on the site, down to approximately 8 feet below current grade. Prehistoric deposits, although not observed during the previous testing program, may lie at deeper levels, approximately 18-28 feet below grade. The Field Archeologist shall monitor the excavations of overlying soils along Howard, Second and Tehama streets that may expose pre-1906 building foundations, and in the central area where other historic privies may be exposed. The Field Archeologist should also monitor excavation within the project area to ensure that prehistoric deposits are not disturbed before they can be assessed for potential significance.</p> <p>In the event buried cultural material is encountered during project construction, in consultation with the Construction Manager, monitors shall be able to temporarily redirect excavation until an assessment and/or documentation of the resource can be completed. Monitors shall collect all diagnostic artifacts for further analysis.</p> <p>The Construction Manager, to ensure workplace safety and efficiency, shall be responsible for overseeing the activities of the archeologist within the excavation per the site safety plan. Evaluation of excavated material shall be conducted on-site, but outside of the excavation, or when all work in the area of the find has stopped at the direction of the Construction Manager. Full safety equipment shall be worn on-site at all times.</p> | |

**TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT**

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|--------------------------------------|-----------------------|---|---------------------------------------|
| D. Cultural Resources (cont.) | | | |
| CP-1 (cont.) | | <p>The Field Archeologist(s), through coordination with the Construction Manager shall have the opportunity to screen random samples of excavated material within an area adjacent to the construction alignment. Field Archeologists shall be permitted to signal equipment operators to place a sample of excavated material next to a screening station, where the soil shall be screened and artifacts, if any, recovered. Provenience of the sample would be recorded, as accurately as possible using the existing project engineering stations. Should potentially significant cultural materials be identified during screening of the sample, the Principal Investigator and the Construction Manager shall consult with the ERO to determine whether to redirect machinery to temporarily allow the Field Archeologist to recover in-situ cultural materials, temporarily allow machinery to be used solely to supply the Field Archeologist with excavated soils for continued screening (thus allowing a larger sample of the cultural debris to be salvaged) or to return to standard operations, permitting soil samples to be screened randomly.</p> <p>The Field Archeologist shall remain well clear of earth moving and excavation equipment. In the event cultural material or archeological features are exposed during construction excavation, the Field Archeologist may request the equipment operator to stop for a period of time sufficient to allow identification and preliminary assessment of the object(s) or feature(s). The Field Archeologist may also take advantage of equipment downtime or breaks in construction activity to examine the ground surface.</p> <p>The Field Archeologist shall take advantage of equipment "down time," working during operator breaks and lunch or, in consultation with the Construction Manager, outside of scheduled work shifts. This will allow for optimum viewing of the ground surface with no interference from operating machinery. Coordination between the Field Archeologist and the Construction Manager is expected to address the anticipated need for archeological investigations.</p> <p>The Field Archeologist shall retain on-site all of the necessary tools to permit efficient use of their time, should recording or data recovery be required. This could include: daily monitoring and feature recording forms, digital camera, measuring tapes, shovels and other hand excavation tools, sifter screens of appropriate size, baggies and marking pens to allow collection of materials, and hammer, stakes, string, or other materials or tools as might be needed.</p> <p>Once excavations have reached depths at which buried cultural resources are unlikely to be present, the Principal Investigator may elect with the approval of the ERO, to provide for an "on-call" Field Archeologist, relying on the observations of the Construction Manager.</p> <p><i>Archeological Data Recovery Program.</i> Data recovery may be necessary if potentially significant cultural deposits are encountered during project construction.</p> | |

**TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT**

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|--------------------------------------|-----------------------|---|---------------------------------------|
| D. Cultural Resources (cont.) | | | |
| CP-1 (cont.) | | <p>A data recovery operation must be conducted in accordance with a well defined approach or research design. The research design presented above has been formulated to ensure that the results of data recovery can produce direct and indirect benefit to both the scientific community and lay public in an efficient and cost-effective manner. Data recovered shall be analyzed to address the research questions presented in the Research Design regarding the history of San Francisco, and shall take into account previous relevant research in the area. Specific recovery methods and analysis techniques are discussed below, as are categories of artifacts that shall be collected, as well as those for which collection may not be required. Adequate provisions are provided for the modification of the program should unforeseen circumstances arise during construction.</p> <p>The scope of the ADRP shall include the following elements:</p> <ul style="list-style-type: none"> ▪ <i>Field Methods and Procedures.</i> Descriptions of proposed field strategies, procedures, and operations. ▪ <i>Cataloguing and Laboratory Analysis.</i> Description of selected cataloguing system and artifact analysis procedures. ▪ <i>Discard and Deaccession Policy.</i> Description of and rationale for field and post-field discard and deaccession policies. ▪ <i>Interpretive Program.</i> Consideration of an on-site/off-site public interpretive program during the course of the archeological data recovery program. ▪ <i>Security Measures.</i> Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities. ▪ <i>Final Report.</i> Description of proposed report format and distribution of results. ▪ <i>Curation.</i> Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities. <p><i>Human Remains and Associated or Unassociated Funerary Objects.</i> The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and Federal laws. This shall include immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec. 5097.98). The archeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or</p> | |

TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|--------------------------------------|-----------------------|---|---------------------------------------|
| D. Cultural Resources (cont.) | | | |
| CP-1 (cont.) | | <p>unassociated funerary objects (CEQA Guidelines, Sec. 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects.</p> <p><i>Final Archeological Resources Report.</i> The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.</p> <p>Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Major Environmental Analysis division of the Planning Department shall receive three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.</p> <p><i>On-Site Security.</i> The exposure of sub-surface archeological deposits carries with it the inherent risk of looting and destruction of valuable and spatially-sensitive archeological information, as was seen during the previous archeological testing at the site (Archeo-Tec 1990). Consequently, prior to penetration of the existing hardscape, a security fence shall be erected around the project parcel. Once the hardscape has been removed and archeological testing begins, a security guard shall be employed to provide security during those periods when the site is otherwise unoccupied. It shall be the security guard's responsibility to insure that no unauthorized excavations occur and no cultural material is removed from the site.</p> | |

TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|--|-----------------------|---|---|
| E. Transportation | | | |
| TR-1: Traffic generated by the proposed project would degrade level of service at certain local intersections. | Significant | <p>M-TR-1a-Second and Tehama Streets: At the unsignalized intersection of Second and Tehama Streets, the Parking and Traffic Division of the San Francisco Municipal Transportation Agency would prohibit left turns from Tehama Street onto Second Street using appropriate traffic control devices (e.g., regulatory signs). If a physical traffic control (i.e., a raised median the width of the double yellow centerline on Second Street) is needed to ensure no side-street left turns, then northbound left turns from Second to Tehama would also be prohibited. Implementation of this mitigation measure (either with signs only, or with signs and raised median) would improve the levels of service on both Tehama Street approaches to an acceptable LOS D or better. Because this measure is required to mitigate a project impact, implementation of the measure would be the financial responsibility of the project sponsor.</p> <p>M-TR-1b-Folsom and Second Streets: At the signalized intersection of Folsom and Second Streets, the Parking and Traffic Division of the San Francisco Municipal Transportation Agency would modify the signal timing to provide more time for traffic on southbound Second Street. Evaluation of possible signal timing modifications indicates that shifting two seconds of Green from eastbound Folsom Street to southbound Second Street would improve the p.m. peak-hour level of service to an acceptable LOS D. Because this measure is required to mitigate a project impact, implementation of the measure would be the financial responsibility of the project sponsor.</p> | Significant and Unavoidable at the intersection of Second/Harrison Streets; Less than Significant at the intersections of Second/Tehama Streets and Folsom/Second Streets. |
| TR-2: Traffic generated by the proposed project, in conjunction with past, present, and reasonably foreseeable future projects would further degrade level of service at certain local intersections. | Significant | None Available | Significant and Unavoidable at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets; Less than Significant at the intersection of Second/Tehama Streets, Mission/Third Streets, Howard/Second Streets, Howard/First Streets, Folsom/Hawthorne Streets, Harrison/Fourth Streets, and Harrison/First Streets. |

**TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT**

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|---|-----------------------|---|---------------------------------------|
| E. Transportation (cont.) | | | |
| TR-4: Operation of the proposed project's off-street loading area would disrupt traffic flow on Tehama Street. | Significant | M-TR-4-Parking Prohibition: The project sponsor would formally request that the San Francisco Municipal Transportation Agency hold a public hearing to prohibit parking spaces on the north side of Tehama Street, along the southern project site frontage, prior to occupancy of the project building. There are currently five metered parking spaces in this area (four regular spaces, and one yellow loading space). | Less than Significant |
| F. Noise | | | |
| NO-1: Project construction activity could generate noise that could be disruptive to nearby residents and occupants of commercial buildings. | Significant | <p>M-NO-1-General Construction Noise Control Measures: To ensure that project noise from construction activities is minimized to the maximum extent feasible, the project sponsor would undertake the following:</p> <p>The project sponsor would require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).</p> <p>The project sponsor would require the general contractor to locate stationary noise sources (such as compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as five dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible.</p> <p>The project sponsor would require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA.</p> <p>The project sponsor would include noise control requirements in specifications provided to construction contractors. Such requirements could include, but not be limited to, performing all work in a manner that minimizes noise to the extent feasible; use of equipment with effective mufflers; undertaking the most noisy activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings inasmuch as such routes are otherwise feasible.</p> | Less than Significant |

**TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT**

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|---|-----------------------|---|---------------------------------------|
| F. Noise (cont.) | | | |
| NO-2: Should pile driving be employed as part of project construction, it would generate noise and vibration that could be disruptive to nearby residents and occupants of commercial buildings. | Significant | M-NO-2-Noise Control Measures for Pile Driving: Should pile-driving be necessary for the proposed project, the project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. Should pile-driving be necessary for the proposed project, the project sponsor would require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses. Any nighttime work would require a work permit from the Director of Public Works or the Director of Building Inspection pursuant to San Francisco Noise Ordinance Section 2908. | Less than Significant |
| NO-3: Project construction activity, along with construction from other past, present, and reasonably foreseeable future projects, could generate further disruptive noise levels. | Significant | M- NO-3: In addition to implementation of Mitigation Measure NO-1a (and Measure NO-1b if applicable), prior to the time that construction of the proposed project is completed, the project sponsor would cooperate with and participate in any City-sponsored construction noise control program for the Transit Center District Plan area or other City-sponsored areawide program developed to reduce potential effects of construction noise in the project vicinity. Elements of such a program could include a community liaison program to inform residents and building occupants of upcoming construction activities and, potentially, noise and/or vibration monitoring during construction activities that are anticipated to be particularly disruptive. | Less than Significant |
| 2. LESS-THAN- SIGNIFICANT IMPACTS | | | |
| A. Land Use | | | |
| LU-1: The project would neither divide an established community, nor have a substantial adverse impact on the character of the site or vicinity, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |
| B. Aesthetics | | | |
| AE-1: The project would not adversely affect a scenic vista, nor substantially damage scenic resources, nor substantially degrade the existing visual character or quality of the site and its surroundings, nor create new light or glare that would adversely affect views or other people or properties, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |

SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT

TABLE S-1 (cont'd.)

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|---|-----------------------|---------------------|---------------------------------------|
| C. Population and Housing | | | |
| PH-1: The project would not induce substantial population growth, displace existing housing or people, or create substantial demand for additional housing, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |
| D. Cultural Resources | | | |
| CP-2: The proposed project would result in demolition of the loading dock of the 631 Howard Street building, a historical resource, but would not adversely affect this structure. | Less than Significant | None required. | Less than Significant |
| CP-3: The proposed project would be taller and more massive than the adjacent building at 631 Howard Street, a historical resource, but would not cause a substantial adverse change in the significance of this resource | Less than Significant | None required. | Less than Significant |
| CP-4: The proposed project would not substantially alter the spatial relationships among buildings within the two historic districts and other historic resources in the vicinity such that the significance of the districts or other resources would be materially impaired. | Less than Significant | None required. | Less than Significant |
| E. Transportation | | | |
| TR-3: Transit ridership generated by the proposed project would not result in unacceptable levels of transit service, or cause a substantial increase in delays or operating costs. | Less than Significant | None required. | Less than Significant |

**TABLE S-1 (cont'd.)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT**

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|---|-----------------------|---------------------|---------------------------------------|
| E. Transportation (cont.) | | | |
| TR-5: The proposed project would not result in overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas, nor would it create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. | Less than Significant | None required. | Less than Significant |
| G. Air Quality | | | |
| AQ-1: Project construction would not conflict with air quality plans, violate air quality standards, or expose sensitive receptors to substantial pollutant concentrations, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |
| AQ-2: Project operation would not conflict with air quality plans, violate air quality standards, or expose sensitive receptors to substantial pollutant concentrations with respect to regional pollutants, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |
| AQ-3: Project operation would not conflict with air quality plans, violate air quality standards, or expose sensitive receptors to substantial pollutant concentrations with respect to local pollutants, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |
| AQ-4: Project operation would not conflict with air quality planning concerning reduction of greenhouse gas emissions. | Less than Significant | None required. | Less than Significant |

SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED 222 SECOND STREET PROJECT
TABLE S-1 (cont'd.)

| Potential Impact | Level of Significance | Mitigation Measures | Level of Significance with Mitigation |
|--|-----------------------|---------------------|---------------------------------------|
| H. Wind | | | |
| WS-1: The proposed project would not result in a new exceedance of the wind hazard criterion, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |
| I. Shadow | | | |
| WS-2: The proposed project would not adversely affect the use of any park or open space under the jurisdiction of the Recreation and Park Department, nor would it substantially affect the usability of other existing publicly accessible open space or outdoor recreation facilities or other public areas, either individually or cumulatively. | Less than Significant | None required. | Less than Significant |

As explained in Sections IV.J through IV.R, no significant impacts were identified with respect to the following:

- Recreation and Public Space (the project would not increase park use such that substantial deterioration would occur; would not result in adverse physical effects due to new facilities; and would not physically degrade existing recreational resources);
- Utilities and Service Systems or Public Services (the project would not result in substantial adverse physical effects with regard to the provision of potable water supplies, wastewater or stormwater collection and treatment, solid waste collection and disposal, police, fire, or emergency medical services, or schools, parks, or other government facilities);
- Biological Resources (the project would not adversely affect candidate, sensitive, or special-status species or their habitat, or other sensitive habitats);
- Geology, Soils, and Seismicity (the project would not result in substantial adverse physical changes with respect to exposure of persons to earthquakes or other geologic hazards, would not be located on unstable soils, and would not alter unique geological features);
- Hydrology and Water Quality (the project would not result in substantial adverse physical changes with respect to water quality, groundwater supply, site drainage, flooding, erosion, or inundation);
- Hazards and Hazardous Materials (the project would not create a significant hazard related to routine transport, use, or disposal of hazardous materials or risk of upset or accident or to an identified previous use or accident, would not emit hazardous emissions or involve handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, would not interfere with an emergency response or evacuation plans or expose people or structures to a significant risk of loss, injury or death involving fires);
- Mineral and Energy Resources (the project would not result in the loss of a known mineral resource mineral resource recovery site, or encourage wasteful use of fuel, water, or energy); or
- Agricultural Resources (the project would not adversely affect farmland or forestry resources).

There are several items required by local, state, and federal law that would serve to avoid potential significant impacts; they are summarized here for informational purposes. These measures include: no use of mirrored glass on the building to reduce glare, as per City Planning Commission Resolution 9212; limitation of construction-related noise levels, pursuant to the San Francisco Noise Ordinance (Article 29 of the *San Francisco Police Code*, 1972); compliance with Section 3424 of the *San Francisco Building Code*, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures; and observance of state and federal OSHA safety requirements related to handling and disposal of other hazardous materials, such as asbestos. Because compliance with the law would obviate any potential impacts related to the above issues, neither significant impacts nor mitigation measures are identified in connection with these issues.

C. Significant Environmental Impacts That Cannot Be Avoided in the Project Is Implemented

Transportation

The proposed project would result in a significant impact at the intersection of Harrison/Second Streets. Although the addition of project traffic would not alter the existing level of service (LOS), which would remain at an unacceptable LOS E for the intersection overall, project traffic would constitute about 16 percent of the southbound left turn volume (which would operate with unacceptable LOS F conditions), and the increased delay at this intersection would constitute a significant project traffic impact. No feasible mitigation is available for this impact; the unacceptable LOS is primarily the result of heavy traffic flow to the Bay Bridge in the p.m. peak hour.

In addition, the proposed project's contribution to future traffic growth at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets would constitute a cumulatively considerable contribution to adverse 2025 cumulative traffic conditions, and would be considered a significant impact. That determination was reached based on the examination of the traffic volumes for the vehicle movements that determine the overall level of service performance at the intersections projected to operate at LOS E or F under 2025 cumulative conditions. The project would add substantial numbers of vehicles to turning movements that determine the overall LOS F performance (i.e., "critical" movements) at these four intersections.

No feasible mitigation is available for the cumulative impacts at the above four intersections, as each intersection is already signalized. Therefore, this impact would be significant and unavoidable.

No other significant impacts were identified that could not be mitigated to a less-than-significant level.

D. Significant Irreversible Environmental Changes That Would Result if the Proposed Project Is Implemented

The project would commit future generations to an irreversible commitment of energy, primarily in the form of fossil fuels (unless substantially replaced at some point in the future) for heating and cooling of the building, for automobile and truck fuel, and for energy production for lighting, computers, and other equipment in the building and in the park. The project would also require an ongoing commitment of potable water for building employees and visitors. Additionally, the project would use fossil fuel during demolition of the existing parking lot in construction of the proposed project. Construction would also require the commitment of construction materials, such as steel, aluminum, and other metals, concrete, masonry, lumber, sand and gravel, and other such materials, as well as water.

E. Areas of Controversy to Be Resolved

On the basis of public comments on the NOP, potential areas of controversy and unresolved issues for this project include effects on traffic, transit, and parking; compatibility with surrounding development;

noise and air quality impacts of construction, including cumulative construction impacts; and seismic safety. These issues are discussed in this EIR.

F. Alternatives

Alternative A – No Project Alternative

This alternative would entail no change to the site, which would remain in its existing condition. The existing parking lot and adjacent loading dock would continue to operate for the foreseeable future.

Under this alternative, the project impacts that are described in Chapter IV would not occur. In particular, there would be no significant traffic impact, including cumulative impacts; although three study intersections that currently operate at Level of Service (LOS) E or F would continue to do so, this alternative would make no contribution to this impact. With no excavation, this alternative would avoid the project's significant but mitigable effect on archeological resources. Under this alternative, no new structure would be built, and this alternative would therefore avoid the project's less-than-significant impacts on aesthetics, historical resources, shadow, and wind. Also, this alternative would result in no emissions of criteria pollutants, and would avoid the project's less-than-significant impacts on air quality. Additionally, none of the other less-than-significant impacts identified in Chapter IV would transpire under this alternative.

Alternative B – Compliance with Planning Code Bulk Limits

Under this alternative, an office tower would be built with the same office and retail floor area as with the project, in a 27-story building, compared to 26 stories with the proposed project, and the shape of the building would be tailored to the Downtown Plan bulk limits. The office tower under this alternative would consist of three elements, as with the project, but the lower tower would have floor plates about 15 percent smaller than those of the project, at 17,000 gross square feet. (The base and upper tower would have similarly sized floor plates to those of the project, although the base would occupy more floors than with the project.). To achieve the relative bulk reductions, the lower tower would have greater setbacks than those with the project. Parking and loading would be the same under this alternative as with the project. The height of the tower under this alternative would be the same as that of the proposed project—approximately 350 feet plus mechanical levels—because, while this alternative would have one additional story, the floor-to-floor heights would be reduced. Unlike the project, this alternative would comply with the existing height limit because the northwest corner of the site, where the height limit is 150 feet, would be occupied only by the 103-foot-tall building base. With the reduced lower tower bulk compared to the proposed project, this alternative would not require an exception under *Planning Code* Section 309 to the bulk controls of Section 270. As with the proposed project, this alternative would include acquisition of a portion of the adjacent 631 Howard Street parcel and demolition of the concrete loading dock on that site.

Effects of this alternative would be the same as or similar to those of the proposed project. Effects related to the intensity of development, including transportation effects and effects on air quality, would be the same as those of the proposed project. Like the proposed project, this alternative would have a significant,

unmitigable impact on intersection level of service at the intersection of Second and Harrison Streets, and would contribute considerably to significant cumulative unavoidable traffic impacts at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets. Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project; operational air quality and noise impacts would be less than significant, also as with the project. Effects related to the building design, including aesthetics, historical resources, shadow, and wind, would be similar to or slightly less substantial than those of the proposed project, and would not be significant. This alternative would not result in any new significant impacts that would not arise with the proposed project.

Alternative C – Reduced Project Alternative

This alternative would develop a 19-story, 250-foot-tall building containing the same mix of uses as the proposed project and a single basement, but no on-site parking would be included. This alternative would provide approximately 335,000 square feet of office space (about 325,000 square feet of gross floor area) and about 3,000 square feet of restaurant/retail space on the ground floor. The floor area ratio would be 13.6:1. Under this alternative, the new building would be 150 feet tall on the western portion of the project site, in compliance with the existing height limit on that part of the site. Therefore, this alternative would not entail rezoning to change the height limit of the western portion of the site. Unlike the proposed project, this alternative would not include acquisition of a portion of the parcel occupied by the adjacent 631 Howard Street building and demolition of the concrete loading dock on that site.

With 25 percent less office space than the proposed project and a reduction in the amount of ground-floor restaurant/retail space, Alternative C would generate nearly 30 percent fewer peak-hour vehicle trips than the proposed project, although this would not avoid the proposed project's significant traffic impacts at the intersections of Folsom/Second Streets and Harrison/Second Streets. As with the project, the Folsom/Second Streets intersection impact could be mitigated, while this alternative's impact at the Harrison/Second Streets intersection would be unavoidable. This alternative would avoid the project's impact at the Second/Tehama Streets intersection. Cumulative traffic impacts would be reduced, compared to the project, but this alternative, like the project, would combine with the large volume of p.m. peak-hour Bay Bridge-bound traffic to result in significant cumulative impacts at Folsom/Second Streets and, likely, at Harrison/Second Streets. However, the project's contribution would not be considerable for the Howard/Third Streets or Howard/New Montgomery Streets intersections, and the cumulative impact there would be less than significant. Reduced vehicle trips would result in fewer emissions, compared to the project; operational air quality impact would be less-than-significant, as with the project. Effects related to the building design, including aesthetics, historical resources, shadow, and wind, would be less substantial than those of the proposed project, because the tower under this alternative would be about 30 percent shorter than the project and would also have less bulk at the upper stories. At 250 feet, the Alternative C building would cast considerably less shadow on Yerba Buena Gardens than would the proposed project, thereby reducing the project's less-than-significant shadow impacts. This alternative would cast no new shadow on the elevated "City Park" planned atop the new Transit Center. Effects on historical resources could also be incrementally reduced, given the shorter tower's moderating effect, compared to the project, on contrast with nearby historic buildings; these effects would be less-

than-significant, as with the proposed project. Wind effects would be similar to those of the proposed project, and would be less than significant. Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project. This alternative would not result in any new significant impacts that would not arise with the proposed project.

Alternative D – Preservation Alternative

Like the proposed project, this alternative would develop a 26-story, 350-foot-tall office building with ground-floor restaurant/retail space. The Preservation Alternative would provide the same amount of office and retail space as the proposed project and, also like the project, would include two basement parking levels. The primary difference between this alternative and the proposed project is that the Preservation Alternative is intended to be more sympathetic in design to the adjacent 631 Howard Street building and to the New Montgomery–Second Street Historic District and the Second and Howard Streets National District: the Preservation Alternative would feature a more traditional design of so-called “punched” windows, using precast concrete panels, and a building base designed as a distinct seven-story element consistent in height, massing, and character with nearby historic structures. At the corner of Second and Howard Streets, the base would include a series of bays delineated with pilasters and containing horizontally oriented windows. The overall effect would be that, from ground level, the base would “read” almost as a separate structure at the corner of Second and Howard Streets. As with the project, the floor area ratio would be 18:1. Like the proposed project, this alternative would entail rezoning and a *General Plan* height map amendment to change the height limit of the western portion of the site from 150 feet to 350 feet and would include acquisition of a portion of the parcel occupied by the adjacent 631 Howard Street building and demolition of the concrete loading dock on that site.

The Preservation Alternative would reduce the proposed project’s less-than-significant historical resources impact on the 631 Howard Street building and on the nearby historic districts due to the inclusion of a relatively strongly defined base, of traditional design and set off from the remainder of the tower by an upper cornice and setbacks. Additionally, the design of the Preservation Alternative would be more sympathetic to 631 Howard Street than would the proposed project. With the same office floor area, the same restaurant/retail space, and the same number of parking spaces as the proposed project, the Preservation Alternative would have the same impacts related to the intensity of development as the proposed project. Like the project, this alternative would result in significant traffic impacts at the intersections of Folsom/Second Streets, Second/Tehama Streets, and Harrison/Second Streets. As with the project, the first two intersection impacts could be mitigated, while this alternative’s impact at the Harrison/Second Streets intersection would be unavoidable, because of the heavy p.m. peak-hour traffic flow destined for the Bay Bridge. Cumulative traffic impacts would also be the same as those of the project (significant cumulative impacts at Folsom/Second Streets, Howard/Third Streets, Howard/New Montgomery Streets, and Harrison/Second Streets). Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project; operational air quality and noise impacts would be less than significant, also as with the project. Shadow impacts would be similar to those of the project, while the additional setbacks in this alternative could be expected to incrementally reduce ground-level winds, compared to the project. This alternative would not result in any new significant impacts that would not arise with the proposed project.

Alternative E – No-Rezoning Alternative

This alternative would entail development of an office tower of comparable height and density to with the proposed project, but to comply with the existing height limit on the northwestern portion of the site, this alternative would be limited to 150 feet in height in this area and would add one story of office space (the building would be 27 stories tall, compared to 26 stories for the project, with reduced floor heights).

Accordingly, under this alternative, the building would be set back about 45 feet from the western property line at a height of about 90 feet, resulting in several floors having lesser area than the same floors in the proposed project. To make up for this loss of floor area, the building base would accommodate an additional floor, compared to the project, for an overall height (in feet) and density that would be equivalent to the proposed project. Compared to the proposed project, this alternative would shift the apparent bulk of the tower towards the corner of Second and Howard Streets. Like the proposed project, this alternative would require an exception under *Planning Code* Section 309 to the bulk controls of Section 270, for the lower tower. The development program under this alternative would be the same as that of the project, and this alternative would include acquisition of a portion of the 631 Howard Street parcel and demolition of the loading dock on that site.

With the same office floor area, the same restaurant/retail space, and the same number of parking spaces as the proposed project, the No-Rezoning Alternative would have the same impacts related to the intensity of development as the proposed project. Like the project, this alternative would result in significant traffic impacts at the intersections of Folsom/Second Streets, Second/Tehama Streets, and Harrison/Second Streets. As with the project, the first two intersection impacts could be mitigated, while this alternative's impact at the Harrison/Second Streets intersection would be unavoidable, because of the heavy p.m. peak-hour traffic flow destined for the Bay Bridge. Cumulative traffic impacts would also be the same as those of the project (significant cumulative impacts at Folsom/Second Streets, Howard/Third Streets, Howard/New Montgomery Streets, and Harrison/Second Streets). This alternative would construct a seven-story, 90-foot-tall portion of the building immediately adjacent to the 50-foot-tall 631 Howard Street building, creating greater contrast with the historic building than would occur with the proposed project. However, because this alternative would shift the mass of the tower some 45 feet east of 631 Howard Street, the effect on historical resources would be less than significant. Likewise, with regard to the adjacent and nearby historic districts, and as with the proposed project, this alternative would have a less-than-significant impact, as the project site is outside both districts and because the seven-story element would be comparable in height to buildings across Howard Street. Visual impacts would be similar to those of the project, because the overall massing would be similar to that of the project. Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project; operational air quality and noise impacts would be less than significant, also as with the project.

Environmentally Superior Alternative

The Reduced Project Alternative (Alternative C) would avoid the project's impact at the intersection of Second/Tehama Streets and the project's considerable contribution significant cumulative impacts at Howard/Third and Howard/New Montgomery Streets. However, this alternative could potentially result

in greater greenhouse gas emissions and regional traffic impacts, although it would be speculative to conclude that these impacts would be significant and adverse.

CHAPTER I

Introduction

This environmental impact report (EIR) analyzes potential environmental effects associated with the proposed 222 Second Street project, which involves the removal of an existing parking lot at the southwest corner of Second and Howard Streets in San Francisco, and construction of an approximately 350-foot-tall office building containing approximately 430,650 square feet of office space, about 4,600 square feet of retail space, and two levels of basement parking (about 54 spaces; parking for 80 vehicles with valet operations). Further detail regarding the proposed project components that form the basis for the EIR analysis are discussed in depth in Chapter II, Project Description.

A. Environmental Review

The San Francisco Planning Department is serving as Lead Agency responsible for administering the environmental review for the proposed project. The California Environmental Quality Act (CEQA) requires that before a decision can be made to approve a project that would pose potential adverse physical effects, an EIR must be prepared that fully describes the environmental effects of the project. The EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental impacts of a project, to recommend mitigation measures to lessen or eliminate significant adverse impacts, and to examine feasible alternatives to the project. The information contained in the EIR is reviewed and considered by the Lead Agency prior to a decision to approve, disapprove, or modify the proposed project. CEQA requires that the Lead Agency shall neither approve nor implement a project unless the project's significant environmental effects have been reduced to a less-than-significant level, essentially "eliminating, avoiding, or substantially lessening" the expected impact, except when certain findings are made. If the Lead Agency approves a project that will result in the occurrence of significant adverse impacts that cannot be mitigated to less-than-significant levels, the agency must state the reasons for its action in writing, demonstrate that its action is based on the EIR or other information in the record, and adopt a Statement of Overriding Considerations.

The project sponsor filed an application on September 12, 2006, for the environmental evaluation of the proposed 222 Second Street project. On May 19, 2007, the Planning Department sent a Notice of Preparation (NOP) to governmental agencies and organizations and persons interested in the project. The NOP is included as Appendix A of this EIR. The NOP requested agencies and interested parties to comment on environmental issues that should be addressed in the EIR. The comment letters received in response to the Initial Study and the NOP are available for review as part of Case File No. 2006.1106E. The Planning Department also conducted a public scoping meeting, on June 6, 2007, to receive oral comments on the scope of the EIR. Comments requested that the EIR analyze the following:

- Effects on traffic, transit, and parking (see Section IV.E, Transportation)
- Compatibility with surrounding development (see Section IV.A, Land Use)
- Noise and air quality impacts of construction, including cumulative construction impacts (see Section IV.F, Noise, and Section IV.G, Air Quality)
- Seismic safety (see Section IV.N, Geology, Soils, and Seismicity).

The City has considered the public comments made by the public in preparing the Draft EIR for the proposed project.

B. Purpose of This EIR

This EIR is intended as an informational document, that in and of itself does not determine whether a project will be approved, but aids the planning and decision-making process by disclosing the potential for significant and adverse impacts. In conformance with CEQA, California Public Resources Code, Section 21000 *et. seq.*, this EIR provides objective information addressing the environmental consequences of the project and identifies possible means of reducing or avoiding its potentially significant impacts.

Specific technical studies prepared for the environmental analysis of the 222 Second Street project include a transportation study by Environmental Science Associates (2009); historical resources background reports by Frederick Knapp, AIA (2008) and Kelley & VerPlanck (2009); a Historical Resources Evaluation Responses prepared by the San Francisco Planning Department (2009); and wind analyses by Environmental Science Associates (2007, 2008, and 2009). These technical studies are detailed data reports and are available for review with the San Francisco Planning Department, in Case File No. 2006.1106E.

The state CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 *et. seq.*) help define the role and expectations of this EIR as follows:

Information Document. An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect(s) of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency (Section 15121(a)).

Standards for Adequacy of an EIR. An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information, which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure (Section 15151).

The CEQA Guidelines, Section 15382, define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the

project....” Therefore, in identifying the significant impacts of the project, this EIR concentrates on its substantial physical effects and upon mitigation measures to avoid, reduce, or otherwise alleviate those effects.

C. Organization of the Draft EIR

This Draft EIR has been organized as follows:

Summary. This chapter summarizes the EIR by providing a concise overview of the project, including the project description, the environmental impacts that would result from the project, mitigation measures identified to reduce or eliminate these impacts, and alternatives to the proposed project.

Chapter 1, Introduction. This chapter (above) and the contents herein, including a discussion of Environmental Review, a summary of the comments received on the scope of the EIR, and the organization of the EIR.

Chapter 2, Project Description. This chapter discusses the project objectives, provides background data on the project location, describes the operational and physical characteristics of the Master Plan, and identifies required project approvals.

Chapter 3, Plans and Policies. This chapter provides a summary of the applicable plans, policies, and regulations of the City and County of San Francisco (City), and regional, state, and federal agencies that have policy and regulatory control over the project site and discusses the proposed project’s consistency with those policies.

Chapter 4, Environmental Setting and Impacts. This chapter describes the project’s existing setting, environmental impacts, and cumulative impacts. Each environmental topic is discussed in a separate section within this chapter.

Chapter 5, Other CEQA Considerations. This chapter presents any growth-inducement that would result from the proposed project, recapitulates the significant environmental effects that cannot be mitigated to a less-than-significant level, presents significant irreversible changes that would result if the project is implemented, and presents any areas of controversy left to be resolved.

Chapter 6, Alternatives. This chapter presents alternatives to the proposed project, including the No Project Alternative, the Mason Street Narrowing Alternative, and the Preservation Alternative.

Appendices.

D. Public Participation

The state CEQA Guidelines and Chapter 31 of the San Francisco Administrative Code encourage public participation in the planning and environmental review processes. The City will provide opportunities for the public to present comments and concerns regarding the CEQA and planning process. These opportunities will occur during a public review and comment period and a public hearing before the San Francisco Planning Commission. Written public comments may be submitted to the Planning Department during the specified public review and comment period (indicated on the cover of this DEIR), and written and oral comments may be presented at public hearings concerning the project.

CHAPTER II

Project Description

The project sponsor, TS 222 Second Street, L.P., proposes to construct a 26-story, approximately 350-foot-tall office tower containing approximately 430,650 square feet of office space. The project would also include retail space and an enclosed publicly accessible open space at the ground floor, and two levels of sub-grade parking containing 54 parking spaces (capacity for approximately 80 vehicles with valet parking operation). The building would be constructed to the standards required for a LEED® (Leadership in Energy Efficient Design) Version 2.2 Gold rating.¹

A. Site Location and Project Characteristics

Site Location

The project site is located on the southwest corner of Howard and Second Streets in what is becoming known as the South Financial District.² The 23,925-square-foot project site is generally square, except where the western property line jogs eastward by 20 feet at the southwest corner of the lot. (As described below, the project sponsor plans to expand the existing site by acquiring this [20-foot-by-82.5-foot] portion of the adjacent property.) The site slopes from south to north at a grade of approximately five percent. Elevation at the corner of Second and Howard Streets is 14 feet, SFD.³

The project site (Assessor's Block 3735, Lot 63) is within the C-3-O (SD) Downtown Office (Special Development) District. Most of the site is within the 350-S height and bulk district (350-foot height limit; bulk limits for base, lower, and upper towers are set forth in *San Francisco Planning Code* Section 270(d), while the northwest corner of the site is within a 150-S height and bulk district (150-foot height limit; bulk limits *Planning Code* per Section 270(d)). The site, which has frontages on Second, Howard, and Tehama Streets, is currently occupied by a surface parking lot. There are no buildings on the project site other than a small parking lot attendant's shed, nor are there any trees or other vegetation on the site, with the exception of low shrubs planted around the perimeter of the parking lot. Figure 1 shows

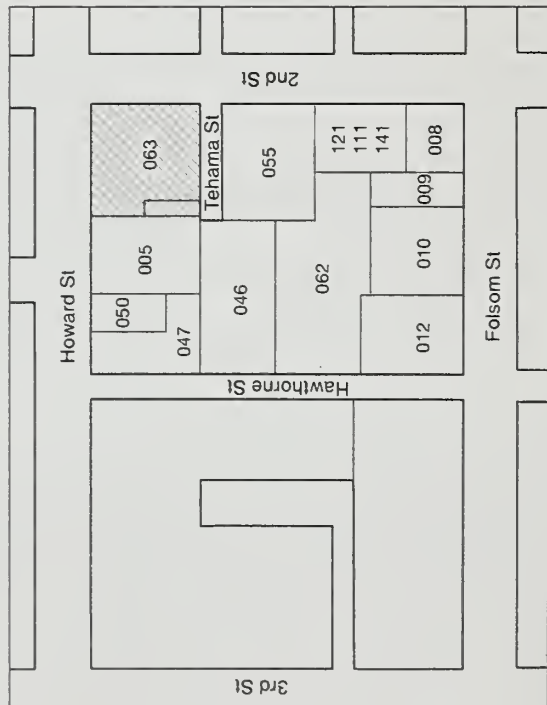
¹ The LEED "Green Building Rating System" is a national standard for the design, construction and operation of so-called "green" buildings that is intended to promote sustainable development by recognizing performance in five areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Gold is the second highest rating in the LEED system. (Information about the LEED rating system obtained from the U.S. Green Building Council at <http://www.usgbc.org/LEED>, accessed on February 6, 2008.

² Consistent with San Francisco practice, Market Street and streets parallel are considered east-west streets. Thus, Howard Street runs east-west, and Second Street runs north-south.

³ San Francisco City Datum (SFD) establishes the City's zero point for surveying purposes at approximately 8.6 feet above the mean sea level established by 1929 U.S. Geological Survey datum.



Project Site
 Portion of Adjacent Parcel to be Added to Site
 Lot Number
 Assessor's Block



SOURCE: ESA

the project location, as well as that of a 1,650-square-foot portion of an adjacent property that the project sponsor proposes to add to the project site.

Project Characteristics

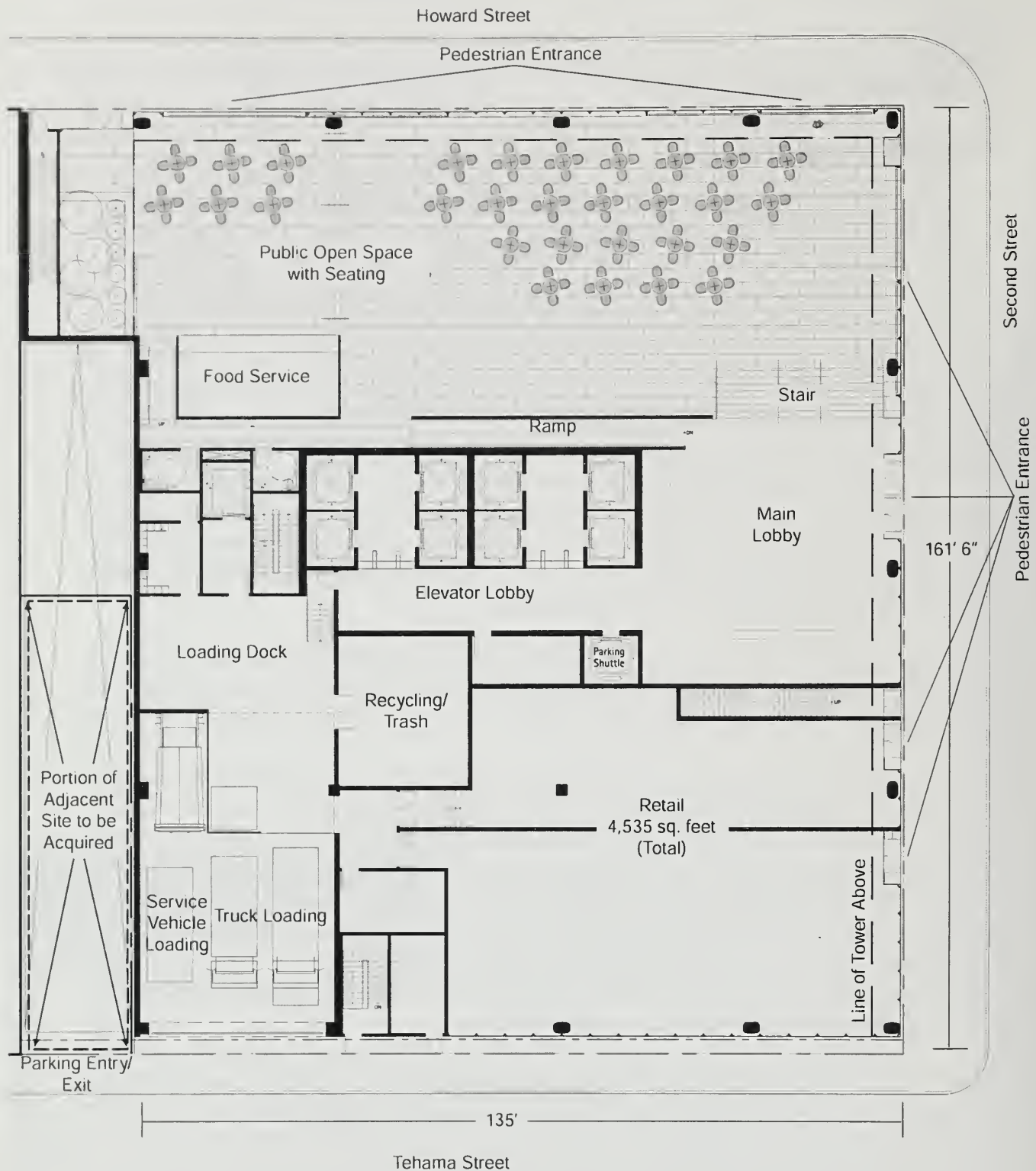
The proposed 26-story building would have office uses on floors two through 26 and approximately 4,600 square feet of retail space on the ground level, proposed for restaurant or retail use (and assumed herein for purposes of a conservative analysis of transportation impacts to be restaurant space). The double-height (24-foot-tall) ground floor would also contain approximately 8,745 square feet of enclosed publicly accessible “indoor park” space (publicly accessible indoor space with seating) to meet the project’s *Planning Code* open space requirement, in addition to the building lobby, a loading dock with two off-street freight loading spaces and one (smaller) service vehicle space, and building support space, including trash and recycling facilities. Pedestrian entrances to the building lobby would be at the center of the Second Street frontage, along the Howard Street frontage, and on Second Street near Howard Street; these last two locations would also provide access to the interior open space. Pedestrian access to the restaurant space would be from Second Street near Tehama Street. Vehicle access to the proposed below-grade parking would be via a two-way ramp from Tehama Street, at the southwest corner of the project site. Freight loading access would also be from Tehama Street, where the loading dock would be located. Figure 2 depicts the proposed ground floor plan.

The proposed building would be generally rectilinear in plan view, with setbacks of differing extent on each of the four facades. Figure 3 presents typical upper-story floor plans for the proposed project’s lower and upper towers (as defined in the *Planning Code*).

The project sponsor proposes to acquire and incorporate into the project site a 1,650-square-foot (20-foot-by-82.5-foot) portion of the adjacent property (Lot 5 in Assessor’s Block 3735), which would increase the size of the project site to 25,575 square feet, and to demolish the existing loading dock at 631 Howard Street, which occupies the portion of the adjacent parcel to be acquired. Assuming the increase in the size of the project site, the proposed building would occupy approximately 90 percent of the site. The proposed project’s garage entrance would be via a driveway off Tehama Street that would be open to the sky and constructed at the existing location of this loading dock.⁴ The project’s proposed restaurant/retail component would occupy the ground floor at the corner of Second and Tehama Streets, at the opposite end of the Tehama Street frontage from the garage driveway.

The building would contain approximately 522,350 square feet of total building floor area, with about 430,650 “gross square feet” (square feet of gross floor area) of office space measured in accordance with the *San Francisco Planning Code*, Section 102.9. A total of 8,613 square feet of publicly accessible open space would be required to meet the *Planning Code* requirement of one square foot per 50 square feet of gross floor area in the C-3 Districts, and the project, with approximately 8,745 square feet of indoor

⁴ The single-story loading dock to be demolished was not part of the original construction of the 631 Howard Street building but was added later to the southeastern corner of that building.

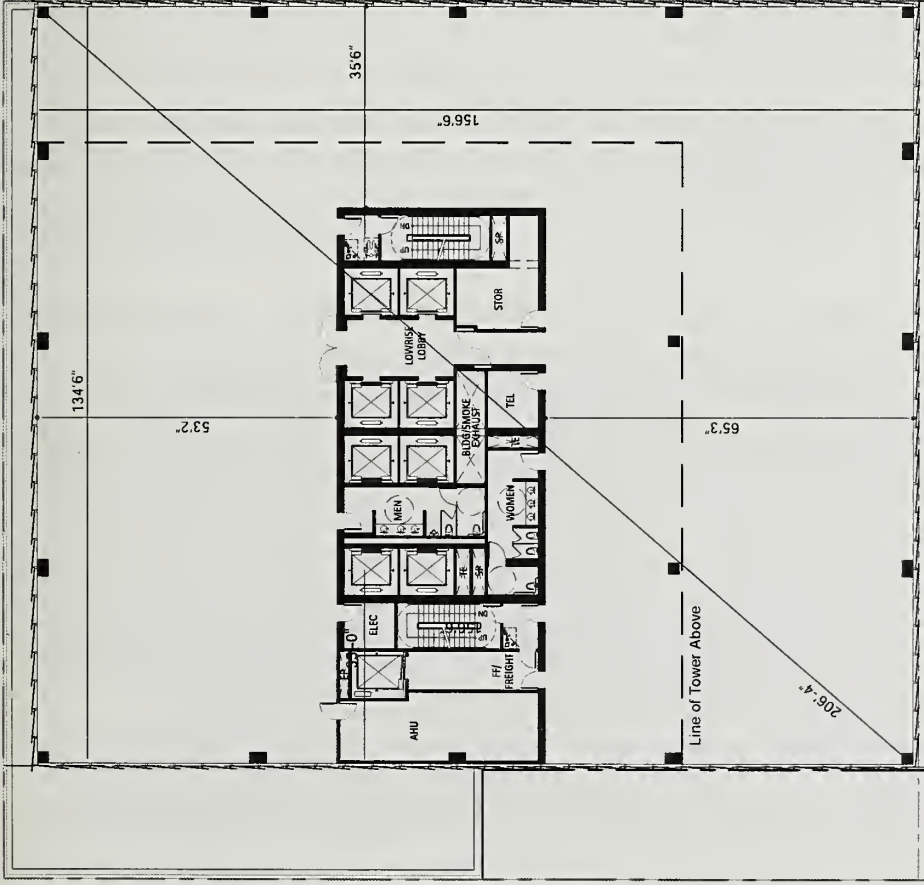


SOURCES: Thomas Phifer and Partners; Heller Manus Architects

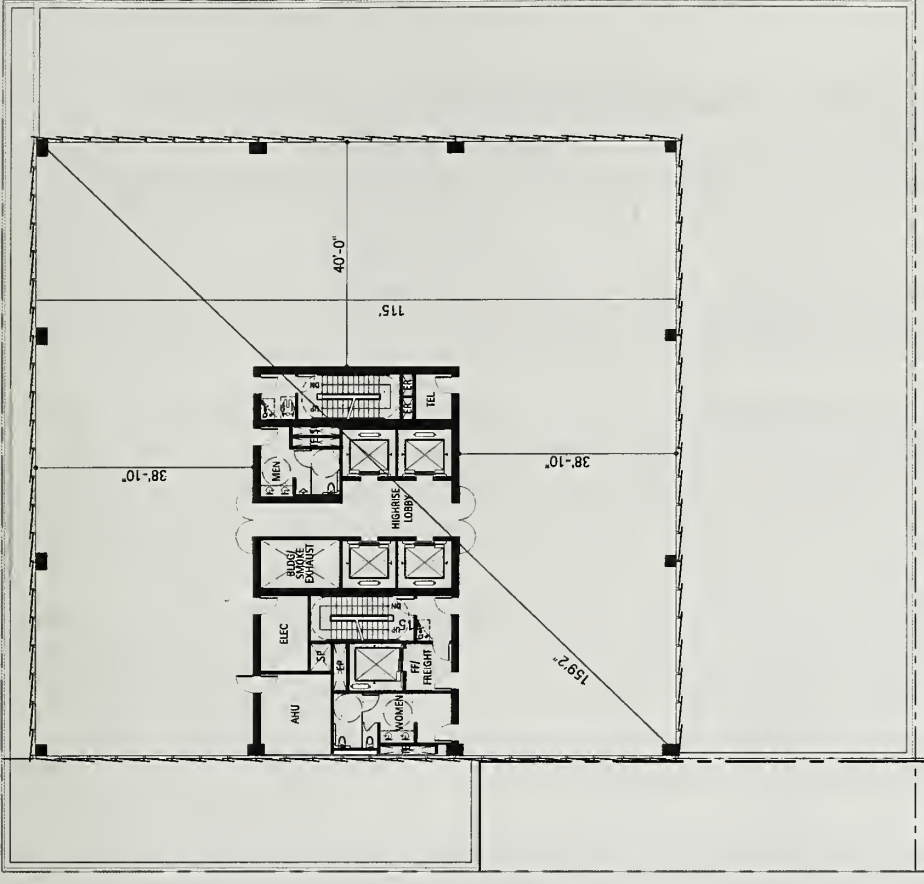
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Figure 2
Ground Floor Plan

Howard Street



Howard Street



park space, would exceed this requirement. The *Planning Code* (Section 138) and Downtown Plan element of the *San Francisco General Plan* consider an enclosed indoor park to be one form of “open space” that may be used for the purposes of satisfying this requirement, assuming applicable guidelines are met.⁵

Table 1, p. 10, summarizes the characteristics of the project and compliance with certain applicable *Planning Code* requirements for downtown high-rise buildings.

About 27,930 square feet of parking would be provided in two basement levels beneath the project site, with access provided via a two-way driveway from Tehama Street at the southwest corner of the project site (see Figure 4, p. 11). The basement levels would include a total of 54 marked parking spaces, with capacity for approximately 80 vehicles with valet parking operation. The basement would also include approximately 46 bicycle parking spaces, which would exceed the requirement of *Planning Code* Section 155.4(d).⁶ The proposed floor area devoted to off-street parking would be equal to the maximum permitted 7 percent of building gross floor area pursuant to *Planning Code* Section 151.1. Three off-street loading spaces would be provided on Tehama Street (two for trucks and one smaller space for a “service van”), and three additional service van spaces would be provided in the basement; together, these spaces would meet the *Planning Code* requirement under Section 152.1.

As proposed, the project would be a rectilinear tower of diminishing bulk from the building base to a height of approximately 350 feet.⁷ At the fifth floor, at a height of approximately 60 feet above street grade, the north façade of the building would be set back 5 feet from Howard Street and the west façade would be set back approximately 20 feet from the westerly property line. At the 17th story (about 220 feet above grade), the east façade would be set back 24.5 feet from Second Street, and the south façade would be set back 44.5 feet from Tehama Street. In addition, the fifth floor would include a 5-foot recess, or “reveal,” on all four facades, intended to emphasize a visual break above the first four stories of the building and thereby establish a sense of continuity with nearby historic structures by responding to prevailing cornice line heights.

The proposed setbacks would generally be consistent with the direction for building massing contained in the Downtown Plan element of the *San Francisco General Plan*, but would not be fully consistent with the bulk requirements of *Planning Code* Section 270, which implements the Downtown Plan. Therefore, bulk exceptions would be required because the project would not meet certain bulk limits established in *Planning Code* Section 270(d) for floor plates and horizontal dimensions of the tower. At the lower tower (103 feet to 220 feet in height, or floors 8 through 16, in accordance with Section 270), the project would

⁵ The Downtown Plan (Table 1, Guidelines for Downtown Open Space) states that an Indoor Park should have, among other qualities, at least one street-facing glass wall and be accessible from street level; contain at least 1,000 sq. ft. and be at least 20 feet tall; provide food service and adequate seating, sunlight, and ventilation; and include design features.

⁶ Section 155.4(d) requires 12 bicycle parking spaces for new offices buildings of greater than 50,000 square feet.

⁷ *Planning Code* Section 102.12 permits a building height to be measured, from a street on a lot sloping down from the street (such as Tehama Street, in this case) for up to a depth of 100 feet or half the distance to the opposing street (Howard Street). Under Section 102.12, the remainder of the building must be measured from the opposing street. The 350-foot building height is the maximum roof height measured from Howard Street, excluding a 20-foot-tall mechanical penthouse and screen, which would bring the apparent height to 370 feet.

TABLE 1
PROJECT CHARACTERISTICS AND PLANNING CODE COMPLIANCE

| Proposed Use | Description | Gross Building Area (GSF) | Gross Floor Area (GFA) ^a |
|---------------------------|--------------------------|--|-------------------------------------|
| Office | 25 stories | 447,870 sq. ft. | 430,650 sq. ft. |
| Retail (Restaurant) | Ground floor (part) | 4,600 sq. ft. | 0 |
| Parking ^b | 54 spaces | 27,930 sq. ft. | 0 |
| Bldg. services | Basement | 18,125 sq. ft. | 0 |
| Loading ^c | 2 spaces + 4 van spaces | 3,895 sq. ft. | 0 |
| Lobby/Interior open space | Ground Floor (remainder) | 14,335 sq. ft. | 0 |
| Mech. Penthouse | Equipment room | 5,600 sq. ft. | 0 |
| TOTAL | — | 522,355 sq. ft. | 430,650 sq. ft. |
| Site area | | 23,925 sq. ft. (exist.) 25,575 sq. ft. (prop.) ^d | |

| Parameter | Permitted | Proposed |
|---|--|--------------------------------------|
| Height (feet) ^e | 350 feet | 350 feet |
| Height (stories) | — | 26 + 2 bsmt. + 2 mech. p'hs. |
| Bulk (Sec. 270(e)) | | |
| Lower Tower (103 feet ^f to 220 feet ^g in height) | | |
| Maximum horizontal dimension | 160 feet | 156 feet, 6 inches |
| Maximum diagonal dimension | 190 feet | 206 feet, 4 inches |
| Maximum average floor plate | 17,000 sq. ft. | 20,429 sq. ft. |
| Maximum floor size, any lower-tower floor | 20,000 sq. ft. | 20,429 sq. ft. |
| Upper Tower (above 220 feet in height) ^h | | |
| Maximum horizontal dimension | 130 feet | 115 feet |
| Maximum diagonal dimension | 160 feet | 159 feet, 2 inches |
| Maximum average floor plate | 12,000 sq. ft. | 12,000 sq. ft. |
| Maximum floor size, any upper-tower floor | 17,000 sq. ft. | 12,000 sq. ft. |
| Minimum volume reduction required in upper tower (compared to straight extension of lower tower) | 42 percent | 41.3 percent |
| Floor Area Ratio (Secs. 124 & 128) ⁱ | 18.0:1 | 18.0:1 ^j |
| Off-Street Vehicle Parking (Sec. 151.1) | 7 percent of gross floor area, or 30,146 sq. ft. max. | 27,930 sq. ft. |
| Bicycle Parking (Sec. 155.4) | 12 | 46 |
| Parameter | Required | Proposed |
| Open Space (Sec. 138) | 8,615 sq. ft. | 8,745 sq. ft. |
| Shadow (Sec. 146) | 62 degree plane at 132 feet above grade | None |
| Off-Street Freight Loading (Sec. 152.1) | 4 | 2 spaces + 4 van spaces ^c |
| Separation of Towers (Sec. 132.1(c)) | 19 feet ^k | 20 feet |

NOTE: All figures rounded.

- ^a Gross floor area (GFA) is calculated for *Planning Code* compliance purposes (per Sec. 102.9) and excludes certain portions of the building, including accessory parking and loading space, mechanical and building storage space, ground-floor lobby space and 5,000 gross square feet of ground-floor "convenience" retail space. Office GFA excludes aggregate of 17,220 sq. ft. of mechanical space at all office floors.
- ^b Space for approximately 80 vehicles would be provided if valet parking were offered.
- ^c *Planning Code* Section 153(a)(6) allows the substitution in C-3 Districts of two service vehicle spaces for each required off-street freight loading space, provided that a minimum of 50 percent of the required number of spaces are provided for freight loading. Therefore, the project would meet the Code requirement of four spaces.
- ^d Proposed lot size assumes project sponsor's acquisition of 1,650-sq.-ft. portion of adjacent lot to the west.
- ^e Proposed height excludes mechanical penthouse and screen (up to 20 feet).
- ^f Building base height, measured according to the *Planning Code*, is 1.25 times the width of Second Street (82.5 feet), or 103 feet.
- ^g Lower tower, measured according to the *Planning Code*, extends from top of base to approximately 220 feet.
- ^h Dimensions in excess of permitted maximums require exceptions under *Planning Code* Sections 309 and 272.
- ⁱ Basic permitted floor area ratio is 6.0:1; FAR of up to 18.0:1 is permitted with transfer of development rights, proposed as part of project.
- ^j No development rights are associated with the 631 Howard Street loading dock, according to a Zoning Administrator determination.
- ^k Minimum setback required from center line of abutting street(s) and from interior property line(s).

SOURCES: *San Francisco Planning Code* Section 270(d); Heller Manus Architects; Thomas Phifer and Partners



Garage Level 1



Garage Level 2

SOURCES: Thomas Philier and Partners; Heller Manus Architects

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Figure 4
 Basement Plans

have a maximum diagonal dimension of 206 feet, 4 inches, which would exceed the permitted maximum of 190 feet. Additionally, the maximum and average floor plate size of 20,429 square feet would exceed the permitted areas of 17,000 square feet and 20,000 square feet, respectively. However, the maximum plan length of 156 feet, 6 inches would comply with the permitted maximum of 160 feet. At the upper tower (above 220 feet in height, or floors 17 through 26), the project would be consistent with the requirements of Section 270(d). Moreover, the building would provide slightly less than the required overall volume reduction at the upper tower: the volume of the upper tower would be reduced by 41.3 percent, compared to the volume that would occur if the average floor size of the lower tower were extended to the roof, whereas the *Code* requirement for reduction is 42 percent (see Table 1). Therefore, the proposed project would require exceptions to the bulk limits, as is permitted under *Planning Code* Section 309. The proposed project would, however, meet the requirements of *Planning Code* Section 132.1(c) with regard to separation of towers (based upon setbacks from the center line of Howard, Second, and Tehama Streets and from the western interior property line). The *Code* requirement, based on the building's 350-foot height, is a minimum tower setback of 19 feet, while the project would provide a minimum setback of 20 feet from the western interior property line, and at least 20 feet from any of the abutting streets.⁸

The project would be clad in an energy efficient insulated glass unit curtain wall, with vertically oriented, overlapping glass panels and internal horizontal metal rails. The ground floor exterior would be differentiated by a pattern of larger, clear glass panels, including full-height doors along Howard Street that would slide open to provide access to the public open space inside. The ground floor glazing would be divided by wide columns and topped by a belt course⁹ that would delineate the top of the ground floor. Figures 5 and 6, pp. 13 and 14, depict the principal (Second Street and Howard Street) elevations of the proposed project.

It is anticipated that the proposed project would be constructed atop a concrete mat foundation, which would support the building without the need for deep piles. Excavation for the basement level parking garage and the foundation would require removal of approximately 240,000 cubic yards of soil, and would extend to a maximum depth of about 30 feet below grade.

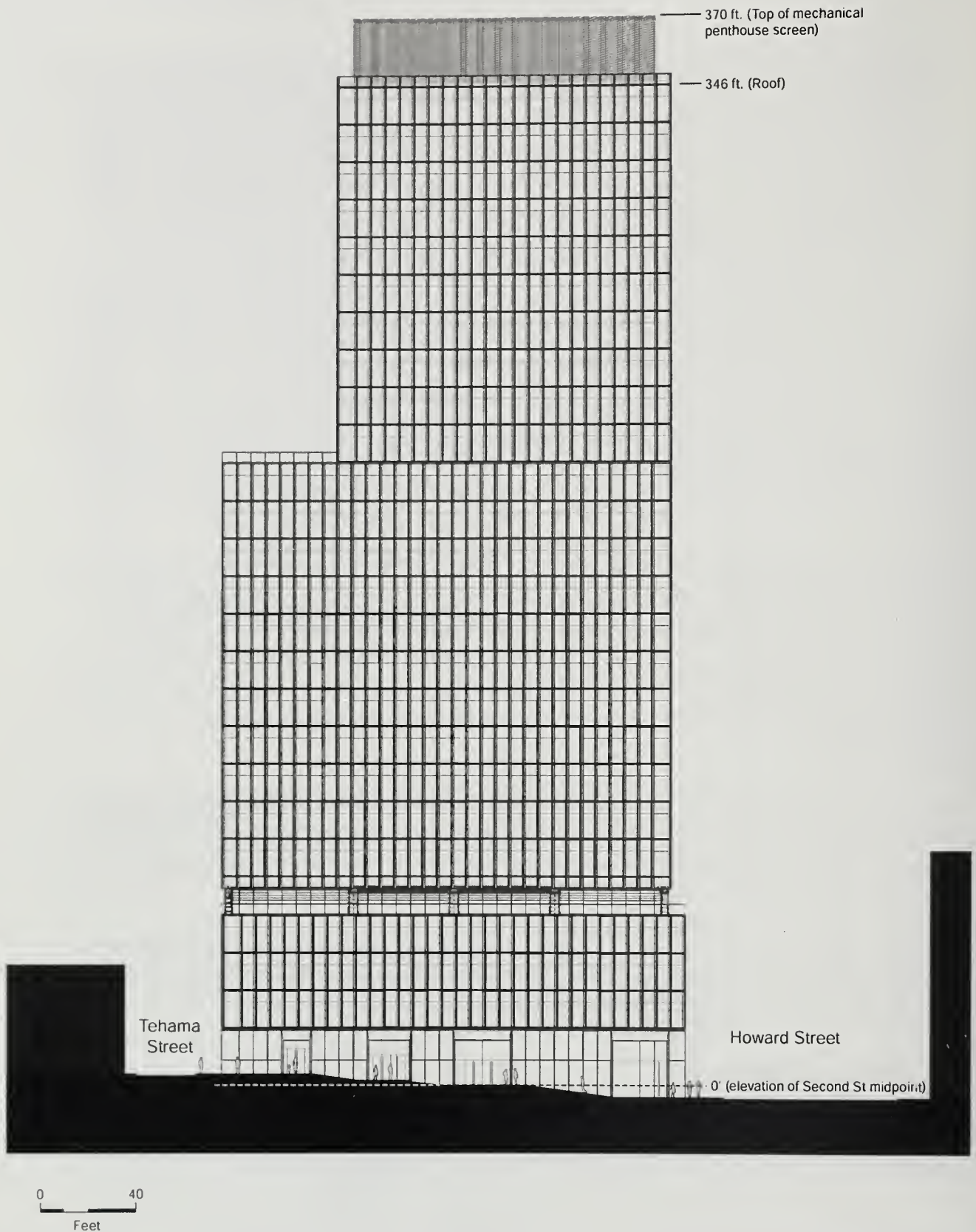
Project construction would take about 21 months, and occupancy is anticipated in 2013. Construction costs are currently estimated at approximately \$100 million. The project architect is Heller Manus of San Francisco, in association with Thomas Phifer and Partners of New York.

B. Project Setting

The project site is within the C-3-O (SD) Downtown Office (Special Development) District, on Assessor's Block 3735; Lot 63. Most of the project site is within the 350-S height and bulk district. The

⁸ The setback on Tehama Street is 2 feet, 6 inches from the property line and 20 feet from the midpoint of Tehama Street. Setbacks are considerably greater on Second and Howard Streets, each of which is 82 feet, 6 inches in width.

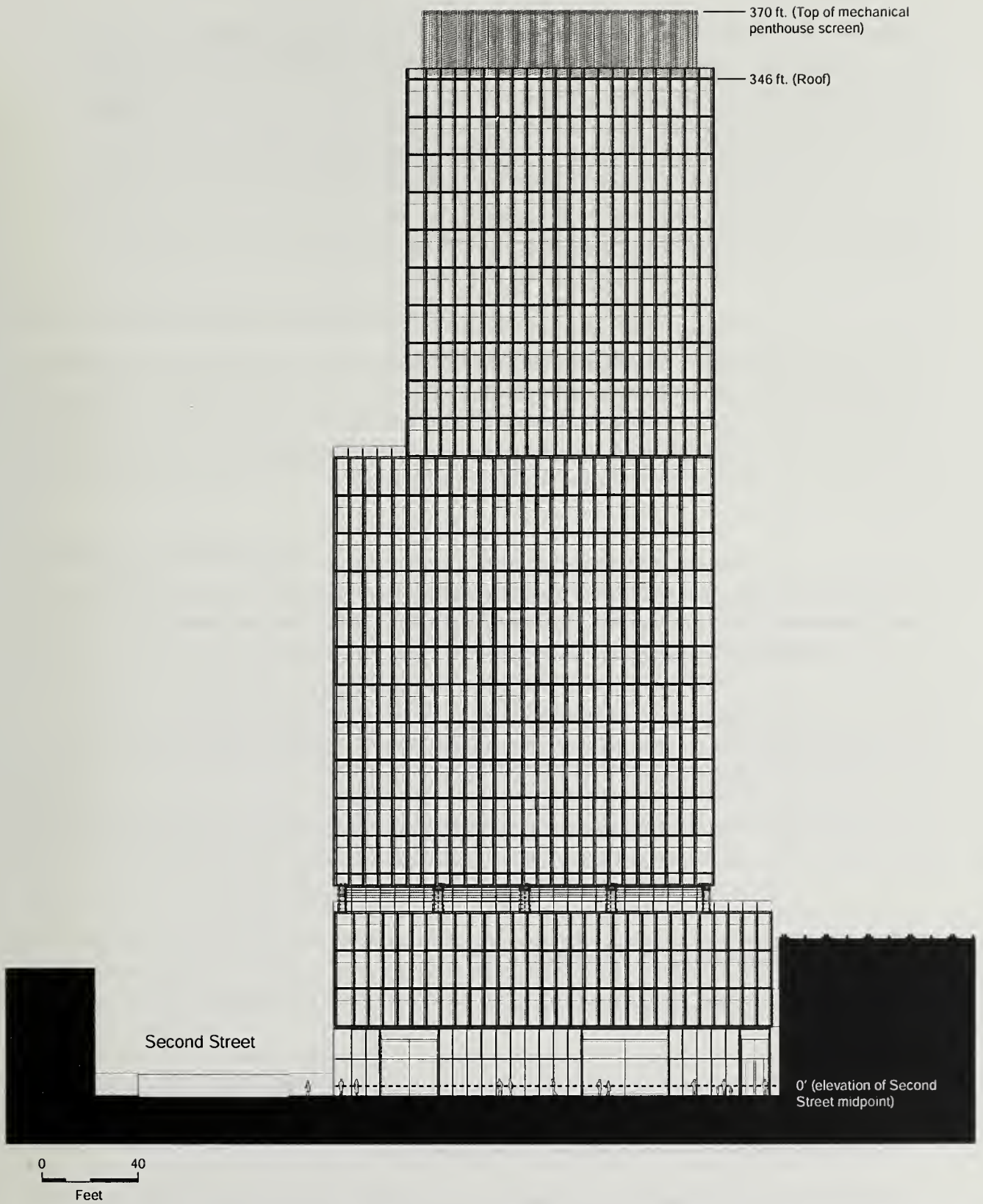
⁹ "Belt course"—a projecting horizontal architectural element, generally that delineates a floor level.



SOURCES: Thomas Phifer and Partners; Heller Manus Architects

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Figure 5
East (Second Street) Elevation



SOURCES: Thomas Phifer and Partners; Heller Manus Architects

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Figure 6
North (Howard Street) Elevation

northwest corner of the site is within a 150-S height and bulk district, which has a height limit of 150 feet. The C-3-O district is described in *Planning Code* Section 310.3 as consisting primarily of high-quality office development focusing on finance, corporate headquarters, and service industries, and serving as an employment center for the region. It permits office uses and retail sales and personal services uses. The Special Development (SD) designation (Sec. 248) constrains development at densities above the base floor area ratio; additional density is allowable only if there is a commensurate reduction in the allowable density of development on other sites in the downtown by the transfer of development rights (TDR) from eligible sites. The C-3-O (SD) District permits a base floor area ratio (FAR) of 6:1. In this district, a maximum FAR of 18:1 is permitted with TDR, and the project, as proposed, would have a FAR of 18:1.

Elevation at the project site ranges from 23 feet at the south side, along Tehama Street, to 15 feet at the north side, along Howard Street. The project vicinity is relatively flat and level northward to the financial district and rises in elevation southward towards Rincon Hill, which begins its slope upward at Howard Street and rises to over 100 feet in elevation less than one-half mile from the project site to the southeast. The project site is not within the “Maher area” (bayward of the historic high tide line), an area in which soil investigation is required per Article 20 of the San Francisco Public Works Code and Article 22A of the Public Health Code.

Development in the vicinity consists primarily of office space above ground-floor retail stores, and there are numerous office uses within the site vicinity, including a 20-story building on the project block at 75 Hawthorne Street. Office towers of San Francisco’s Financial District predominate to the north, northwest, and northeast within about one block of the project site, while relatively smaller office buildings exist closer to the site, within an existing conservation (historic) district. Two relatively new high-rise residential buildings are located within a block of the site, at 199 New Montgomery Street at Howard (16 stories), and at 246 Second Street, on the project block (17 stories); a third is nearing completion at One Hawthorne Street (24 stories), also on the project block.

Yerba Buena Center and the cultural attractions and high-rise hotels in its vicinity are about one block west of the project site. The Transbay Transit Terminal is two blocks northeast of the site, and the elevated Interstate 80 freeway that leads to the Bay Bridge is just over two blocks south.

C. Project Sponsor’s Objectives

The objectives of the project sponsor include the following:

- Provide the maximum amount of Class A office space at this prominent corner site, furthering the Downtown Plan’s goals and objectives of concentrating office uses in the Central Business District; and, in particular with respect to the C-3-O (SD) district, facilitating expansion of downtown office uses to the south of the traditional downtown core while absorbing unused development potential from historic buildings through transfer of development rights;
- Construct an office building of superior quality and design, that complements and is consistent with the downtown area, furthering the objectives of the *General Plan’s* Urban Design Element;

- Maximize usage of Tehama Street, the alley behind the site, by locating automobile access to the garage and loading spaces off this alley.
- Maximize the quality of the pedestrian experience along both Howard Street and Second Street;
- Create outstanding design and scale in the pedestrian sense by creation of an indoor publicly accessible plaza fronting on Howard and Second Street; and
- Construct one of San Francisco's first major LEED® Gold office buildings, thereby reducing the project's carbon footprint and maximizing energy efficiency of the building.

D. Intended Uses of the EIR

This is a project-specific EIR, intended to provide review under CEQA for the proposed 222 Second Street project, to analyze potential environmental impacts of the proposed project and identify mitigation measures where those impacts are significant, and to address cumulative impacts to which the proposed project could make a meaningful contribution. No other projects are intended to receive CEQA review through the use of this EIR.

Approvals Required

The *San Francisco General Plan*, which provides general policies and objectives to guide land use decisions, contains some policies that relate to physical environmental issues. The Planning Commission would review the project in the context of applicable objectives and policies of the *General Plan*. The project site is within the adopted Downtown Plan, an element of the *General Plan*.

As discussed in Chapter III, Compatibility with Existing Zoning and Plans, p. 19, the proposed project would be consistent with the Downtown Plan's stated goal of encouraging expansion of the downtown office core in the general vicinity of the Transbay Terminal while avoiding "undesirable consequences which cannot be mitigated" (Policy 1.1), and would be generally consistent with other objectives and policies of the Downtown Plan, with certain possible exceptions that are enumerated in Chapter III.

The *San Francisco Planning Code* implements the *San Francisco General Plan*, and governs permitted uses, densities and configuration of buildings within San Francisco. The *Code* incorporates by reference the City Zoning Maps. Permits to construct new buildings or to alter or demolish existing ones may not be issued unless the proposed project conforms to the *Planning Code* or an exception is granted pursuant to provisions of the *Code*.

The proposed project's office and retail uses are principal permitted uses in the C-3-O (SD) District.

Most of the project site is within the 350-S height and bulk district (350-foot height limit; bulk limits for base, lower, and upper towers per Section 270(d)), although the northwest corner of the site, which measures about 45 feet wide along Howard Street and is 82 feet, 6 inches deep, is within a 150-S height and bulk district, which has a height limit of 150 feet. Because the proposed tower would extend about 25 feet into this portion of the site, the proposed project would not conform to the *Planning Code* height

limit, and rezoning of this portion of the site would be required, as well as a change in the Downtown Plan height map within the *General Plan*. The project sponsor is seeking an amendment of the height and bulk map (rezoning) of this portion of the site to a 350-S height and bulk district, consistent with the remainder of the project site. Rezoning and a *General Plan* map amendment requires approval from the Board of Supervisors upon a favorable recommendation from the Planning Commission.

The project would require Planning Commission review and approval under Section 309, Permit Review in C-3 Districts, because the project would exceed 50,000 gross square feet and because the sponsor seeks exceptions, pursuant to Section 309, to the following *Planning Code* sections: ground-level wind current requirements (Section 148) because the project would not reduce existing exceedances of the pedestrian wind speed criterion and would result in exceedances of both the pedestrian and seating comfort criteria; bulk requirements (Section 270) because the project would exceed bulk limits above the building's base (lower tower only); and the requirement to avoid penetration of a 62 degree "sun access plane" above a street wall height of 132 feet on Second Street (Section 146).¹⁰ Section 309 also permits the imposition of certain conditions in regard to such matters as a project's siting and design; view, parking, traffic and transit effects; energy consumption; pedestrian environment; and other matters. The proposed project would also be subject to review and approval pursuant to *Planning Code* Section 321 (Office Development: Annual Limit) and Sections 146 and 295, concerning shadow impacts.

As a downtown office project, the project would also be subject to certain other *Planning Code* sections beyond those noted above: Section 138.1, pedestrian streetscape improvements; Section 139, downtown park fees; Section 143, street trees; Section 149, public art requirements; Section 163, transportation management and transportation brokerage services; Section 164, San Francisco Resident Placement and Training Program; Section 165, child care plans and child-care brokerage; Section 313 et. seq., Housing Requirements for Large-Scale Development Projects, and child care provision fees; as well as transit development impact fees under Article 38 of the *Administrative Code*.

The project sponsor has acquired approximately 287,100 square feet of floor area through transfer of development rights (TDR) to allow for development of an 18:1 FAR, as permitted with TDR on the existing project site. (No development rights are associated with the adjacent loading dock to be demolished, according to a Zoning Administrator's determination.)

The project would also require approval of demolition permits (for the parking kiosk, parking lot, and 631 Howard Street loading dock) and building permits by the Department of Building Inspection.

¹⁰ Section 146 applies to buildings along the west side of Second Street from Market Street to 300 feet south of Folsom Street. The required 62 degree angle would necessitate a setback of half the width of the lot, or 77.5 feet from Second Street, at a height of about 280 feet. Because the project would have a maximum setback of 10 feet from Second Street, an exception to the Section 146 requirement would be required.

Approvals Summary

Planning Commission

- Recommendation for amendment of *Planning Code* height and bulk map (rezoning) and Downtown Plan (*General Plan*) height map to increase height limit to 350 feet across site.
- Approval of the project under *Planning Code* Section 309, including exceptions with regard to building bulk (Section 270), ground-level winds (Section 148), and the required setback to minimize shadow on Second Street (Section 146).
- Allocation of office space under *Planning Code* Section 321 (Office Development Annual Limit).

Board of Supervisors

- Amendment of height and bulk map (rezoning) to increase height limit to 350 feet across site.
- *General Plan* map amendment to increase height limit to 350 feet across site.

Department of Building Inspection

- Demolition, site, and building permits.

Department of Public Works

- Street Space Permit from the Bureau of Street Use and Mapping for use of a public street space during project construction (for a pedestrian walkway)

Municipal Transportation Agency

- Special Traffic Permit from the Department of Parking and Traffic for use of a public street space during project construction (for a pedestrian walkway)

CHAPTER III

Compatibility with Existing Zoning and Plans

This chapter describes the project's inconsistencies, if any, with applicable plans and policies, including objectives and policies of the *San Francisco General Plan*. This chapter also discusses the project's compliance with *San Francisco Planning Code*, which implements the *General Plan*. Where inconsistencies are identified that could result in physical effects on the environment, the reader is directed to analysis of those effect in Chapter IV, Environmental Setting, Impacts, and Mitigation Measures.

San Francisco General Plan

The *San Francisco General Plan* contains 10 elements (Commerce and Industry, Recreation and Open Space, Residence, Community Facilities, Urban Design, Environmental Protection, Transportation, Air Quality, Community Safety, and Arts) that provide goals, policies, and objectives for the physical development of the City. In addition, the *General Plan* includes area plans that outline goals and objectives for specific geographic planning areas, such as the greater downtown, including the project site, policies for which are contained in the Downtown Plan, an area plan within the *General Plan*.

A conflict between a proposed project and a *General Plan* policy does not, in itself, indicate a significant effect on the environment within the context of the California Environmental Quality Act (CEQA). Any physical environmental impacts that could result from such conflicts are analyzed in this EIR. In general, potential conflicts with the *General Plan* are considered by the decisions-makers (normally the Planning Commission) independently of the environmental review process. Thus, in addition to considering inconsistencies that affect environmental issues, the Planning Commission considers other potential inconsistencies with the *General Plan*, independently of the environmental review process, as part of the decision to approve or disapprove a proposed project. Any potential conflict not identified in this environmental document would be considered in that context and would not alter the physical environmental effects of the proposed project that are analyzed in this EIR.

Downtown Plan

The project site is within the area covered by the Downtown Plan, an area plan within the *General Plan*. The aim of the Downtown Plan is to encourage business activity and promote economic growth downtown, as well as to guide future development by establishing appropriate bulk and density ratios via several downtown use districts. Centered on Market Street, the Plan covers an area roughly bounded by Van Ness Avenue to the west, The Embarcadero to the east, Folsom Street to the south, and the northern edge of the Financial District to the north. The Plan contains objectives and policies that address the

following issues: provision of space for commerce, housing, and open space; preservation of the past; urban form; and movement to, from, and within the downtown area (transportation). The Downtown Plan was intended to maintain a compact downtown core and direct growth to areas with developable space and easy transit accessibility so that downtown would “encompass a compact mix of activities, historical values, and distinctive architecture and urban forms that engender a special excitement reflective of a world city” (Downtown Plan, Introduction [p. II.1.1 of printed version]). The Downtown Plan limits growth in the traditional downtown, centered in the Financial District, through height limits and FARs (floor area ratios).

One of the fundamental concepts embodied within the Downtown Plan is to expand the City’s downtown office core south from its traditional locus north of Market Street, in a way that “protects the fine scale and rich mix of uses in Chinatown, Jackson Square, Kearny Street, Union Square, Mid-Market, North of Market-Tenderloin, and the hotel-entertainment area near Mason Street.” Thus, the Downtown Plan states, “Major office towers can be constructed on sites remaining in the financial core north and south of Market and in an expanded area south of Market centered on the Transbay Bus Terminal.” The rezoning that accompanied adoption of the Downtown Plan established the City’s greatest height limits (450 to 550 feet) in proximity to the Transbay Terminal.¹¹ The project site, which is at the southwest perimeter of this area of expansive height limits, has a permitted height of 350 feet, except at its northwestern corner, where the height limit is 150 feet.

Shortly after the Downtown Plan was adopted, San Francisco voters approved Proposition M, the Accountable Planning Initiative, that, among other things, established a limit of 950,000 square feet of office space that can be approved in each annual period ending in mid-October. Of that total, 75,000 square feet is reserved for smaller buildings of between 25,000 and 49,999 square feet. (See further discussion of Proposition M, including the eight priority policies established by the measure, on p. 29.)

The proposed project would be consistent with the Downtown Plan’s stated goal of encouraging expansion of the downtown office core in the general vicinity of the Transbay Terminal while avoiding “undesirable consequences which cannot be mitigated” (Policy 1.1). The project would be generally consistent with other objectives and policies of the Downtown Plan, with the possible exception of the following:

- Policy 1.1: Encourage development which produces substantial net benefits and minimizes undesirable consequences. Discourage development which has substantial undesirable consequences which cannot be mitigated.
- Policy 2.1 Encourage prime downtown office activities to grow as long as undesirable consequences of such growth can be controlled.

The potential “undesirable consequences” of a project in the Downtown Plan area that are discussed in the text accompanying Policy 2.1 (and also referenced in Policy 1.1) include impacts related to out-of-scale office development on neighborhood character; loss of historical resources; increased

¹¹ Subsequent rezoning has expanded the area of height limits of 400 to 550 feet to locations along the north side of Folsom Street, where the Embarcadero Freeway once ran, and certain locations on Rincon Hill.

shading of streets and publicly accessible open space; increased pedestrian-level winds; increased traffic and parking demand, pollutant emissions, and energy use; overburdened public transit; increased traffic noise; increased pressure on housing supply resulting from increased employment; and conversion of housing, retail, and service commercial space to office space. Physical effects related to each of these issues are analyzed in the applicable sections of Chapter IV. This EIR identifies a significant impact only in the areas of traffic (degradation in the level of service at certain intersections; see Section IV.E). Other impacts were found to be less than significant, including those related to aesthetics, cultural (archeological and historical) resources, shadow, wind, transit, parking, and pedestrian and bicycle conditions, air quality, energy, noise, and population and housing, in some cases with mitigation measures identified in this EIR. In terms of policy consistency, as noted in Chapter II, Project Description, the project would be inconsistent, in part, with the *Planning Code* height and bulk requirements that implement the Downtown Plan, as well as with the Downtown Plan's height map. As a result, the project would require rezoning to change the height limit to 350 feet on the northwestern portion of the site (the same as the existing height limit on the majority of the site), as well as amendment of the Downtown Plan height map (Map 5) within the *General Plan*, and would require exceptions to certain *Planning Code* provisions (see discussion under "Planning Code (Zoning)" below). These exceptions are permitted pursuant to *Planning Code* Section 309, and therefore do not result in a zoning inconsistency.

Policy 10.5: Address the need for human comfort in the design of open spaces by minimizing wind and maximizing sunshine.

Objective 14: Create and maintain a comfortable pedestrian environment.

Policy 14.2: Promote building forms that will minimize the creation of surface winds near the base of buildings.

As noted, the proposed project also would require an exception from *Planning Code* Section 148 (ground-level winds) and Section 146 (sun access on Second Street), both of which are permitted under Section 309. Project wind impacts are analyzed in Section IV.H, and shadow impacts are analyzed in Section IV.I.

Objective 13: Create an urban form for downtown that enhances San Francisco's stature as one of the world's most visually attractive cities.

Policy 13.1: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing and proposed development.

Objective 15: Create a building form that is visually interesting and harmonizes with surrounding buildings.

Policy 15.1: Ensure that new facades relate harmoniously with nearby facade patterns.

Policy 15.2: Assure that new buildings contribute to the visual unity of the city.

Policy 15.3: Encourage more variation in building facades and greater harmony with older buildings through use of architectural embellishments and bay or recessed windows.

Objective 16: Create and maintain attractive, interesting urban streetscapes.

Policy 16.2: Provide setbacks above a building base to maintain the continuity of the predominant streetwalls along the street.

Policy 16.3: Maintain and enhance the traditional downtown street pattern of projecting cornices on smaller buildings and projecting belt courses on taller buildings.

As noted, the proposed project would require an exception from *Planning Code* Section 270 (bulk limits). Project effects on aesthetics and visual quality are analyzed in Section IV.B.

Other Plans

Environmental plans and policies are those, like the *Bay Area 2005 Ozone Strategy*, which directly address environmental issues and/or contain targets or standards that must be met in order to preserve or improve characteristics of the City's physical environment. The proposed project would not obviously or substantially conflict with any such adopted environmental plan or policy.

Transbay Redevelopment Plan

The Transbay Redevelopment Area is roughly bounded by Mission Street, Second Street, Main Street, and Folsom Street. The main objectives of the Transbay Redevelopment Plan, adopted in June of 2005, are to replace the existing underutilized and outmoded Transbay Terminal and revitalize the vacant and underutilized properties which characterize the remainder of the Redevelopment Area. The Transbay Redevelopment Plan contains the following goals: Create a pedestrian-oriented urban environment that encourages walking as a primary transportation mode within the project area; Encourage the use of alternative modes of transportation by future area residents, workers, and visitors and support the new Transbay Terminal as a major hub while still providing local vehicular access; Create a livable urban community with prime access to downtown and the waterfront, and well-designed streets, open space and retail areas; Establish the area as both a gateway to the central city and a unique transit-oriented neighborhood in San Francisco; Develop a new downtown neighborhood to help address the City's and the region's housing crisis, support regional transit use, and provide financial support to the future Transbay Terminal, including access ramps and a temporary terminal facility, and Caltrain Downtown Extension; Enhance linkage between the new Transbay Terminal and the Financial District through visitor accommodations and commercial development that supports the new terminal; and Create a state of the art multi-modal facility that is an integral part of the surrounding commercial and residential neighborhood. The proposed project would not substantially conflict with any of the goals of the redevelopment plan.

Proposed Transit Center District Plan

A comprehensive plan is being prepared by the Planning Department for the Transit Center District, an area around the Transbay Terminal roughly bounded by Market Street, The Embarcadero, Folsom Street,

and Third Street. The proposed Transit Center District Plan, released in draft form in November 2009,¹² sets forth a number of goals that generally include increasing the amount of allowable development in the transit-rich downtown core, while at the same time improving public amenities, modifying the system of streets and circulation to meet the needs and goals of a dense transit-oriented district, providing additional open space, implementing policies to preserve existing historic structures, and enhancing sustainability. The proposed Plan would result in new planning policies and controls for land use; urban form, including building height and design; street network modifications/public realm improvements; historic preservation; and district sustainability, including the potential creation of a district-wide combined heat and power (cogeneration) system, the enhancement of green building standards in the district, and reductions in potable water use and stormwater runoff. The proposed Plan would allow for height limit increases in subareas comprised of multiple parcels or blocks within the Plan Area. It would also propose one or more programs to support the Transit Center Program and other necessary public infrastructure and amenities in the area through the implementation of one or more new fees or assessments that would be applied to new development. The proposed Plan would result in a comprehensive plan and implementing mechanisms, including *General Plan*, *Planning Code* and Zoning Map amendments, as necessary.

The proposed 222 Second Street project would be consistent with the proposed Transit Center District Plan, both in terms of land use and building height, as well as with the proposed Plan's emphasis on office use; direction to provide parking and loading access from alleys; and policy language calling for interior open space to have a "distinct street presence," have abutting retail space, and be accessible directly from the sidewalk through such means as sliding wall panels. The 222 Second Street project would also generally be consistent with the proposed Plan's emphasis on energy efficiency and sustainability. The proposed project would be partially consistent with the proposed Plan's direction to provide adequate bicycle parking (the proposed Plan would increase the existing *Planning Code* bicycle parking requirement) and to provide for "active retail uses" on Second Street between Market and Folsom Streets (part of the project's Second Street frontage would have retail uses); and with policy language concerning the establishment of a distinct building base (the proposed Plan calls for a minimum 10 foot setback above the base). The proposed project's lobby would be larger, at about 45 feet in width, than the 41-foot maximum width (25 percent of building frontage) called for in the proposed Plan.

In general, therefore, the proposed 222 Second Street project would be consistent with the draft Transit Center District Plan, as proposed in November 2009.

The Sustainability Plan

In 1993, the San Francisco Board of Supervisors established the Commission on San Francisco's Environment, charged with, among other things, drafting and implementing a plan for San Francisco's long-term environmental sustainability. The notion of sustainability is based on the United Nations definition that "a sustainable society meets the needs of the present without sacrificing the ability of future generations and non-human forms of life to meet their own needs." The *Sustainability Plan for the*

¹² The *Transit Center District Plan—Draft for Public Review* is available on the internet at: http://www.sf-planning.org/ftp/CDG/CDG_transit_center.htm.

City of San Francisco was a result of community collaboration with the intent of establishing sustainable development as a fundamental goal of municipal public policy.

The *Sustainability Plan* is divided into 15 topic areas, 10 that address specific environmental issues (air quality; biodiversity; energy, climate change and ozone depletion; food and agriculture; hazardous materials; human health; parks, open spaces, and streetscapes; solid waste; transportation; and water and wastewater), and five that are broader in scope and cover many issues (economy and economic development, environmental justice, municipal expenditures, public information and education, and risk management). Additionally, the *Sustainability Plan* contains indicators designed to create a base of objective information on local conditions and to illustrate trends toward or away from sustainability. Although the *Sustainability Plan* became official City policy in July 1997, the Board of Supervisors has not committed the City to perform all of the actions addressed in the Plan. The *Sustainability Plan* serves as a blueprint, with many of its individual proposals requiring further development and public comment.

The Climate Action Plan

In February 2002, the San Francisco Board of Supervisors passed the *Greenhouse Gas Emissions Reduction Resolution* (Number 158-02) committing the City and County of San Francisco to a greenhouse gas (GHG) emissions reductions goal of 20 percent below 1990 levels by the year 2012. The resolution also directs the San Francisco Department of the Environment, the San Francisco Public Utilities Commission, and other appropriate City agencies to complete and coordinate an analysis and planning of a local action plan targeting GHG emission reduction activities. In September 2004, the Department of the Environment and the Public Utilities Commission published the *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions*. The *Climate Action Plan* examines the causes of global climate change and human activities that contribute to global warming and provides projections of climate change impacts on California and San Francisco from recent scientific reports; presents estimates of San Francisco's baseline greenhouse gas emissions inventory and reduction targets; describes recommended emissions reduction actions in the key target sectors – transportation, energy efficiency, renewable energy, and solid waste management – to meet stated goals by 2012; and presents next steps required over the near term to implement the Plan. Although the Board of Supervisors has not formally committed the City to perform the actions addressed in the Plan, and many of the actions require further development and commitment of resources, the Plan serves as a blueprint for GHG emission reductions, and several actions are now in progress.

The *Climate Action Plan* cites an array of potential environmental impacts to San Francisco from climate change, including rising sea levels which could threaten coastal wetlands, infrastructure, and property; increased storm activity that could increase beach erosion and cliff undercutting; warmer temperatures that could result in more frequent El Niño storms causing more rain than snow in the Sierra, reducing snow pack that is an important source of the region's water supply; decreased summer runoff and warming ocean temperatures that could affect salinity, water circulation, and nutrients in the Bay, potentially altering Bay ecosystems; as well as other possible effects to food supply and the viability of the state's agricultural system; possible public health effects related to degraded air quality and changes in disease vectors; as well as other social and economic impacts.

The Plan presents estimates of San Francisco's baseline GHG emissions inventory and reduction targets. It states that burning fossil fuels in vehicles and for energy use in buildings and facilities are the major contributors to San Francisco's GHG emissions. The *Climate Action Plan* seeks to reduce annual carbon dioxide emissions, by 2012, by 20 percent from 1990 emissions levels. Reduction strategies include targeting emission reductions from burning fossil fuels in cars, power plants and commercial buildings, developing renewable energy technologies like solar, wind, fuel cells and tidal power, and expanding residential and commercial recycling programs. According to the Plan, achieving these goals will require the cooperation of a number of different city agencies. An analysis of the proposed project's effects on global warming and GHGs is presented in Section IV.F, Air Quality.

San Francisco Bicycle Plan

In August 2009, the Board of Supervisors approved the San Francisco Bicycle Plan. The Bicycle Plan includes a citywide bicycle transportation plan (comprised of a "Policy Framework" and a "Network Improvement" document) and implementation of specific bicycle improvements identified within the Plan. The draft Bicycle Plan includes objectives and identifies policy changes that would enhance the City's bike-ability. It also describes the existing bicycle route network (a series of interconnected streets in which bicycling is encouraged), and identifies gaps within the citywide bicycle route network that require improvement. The Bicycle Plan updates the 1997 San Francisco Bicycle Plan. The Final Environmental Impact Report for the Bicycle Plan assessed a total of 56 short-term and long-term bicycle improvement projects. In the vicinity of the project site, the Bicycle Plan EIR evaluated a project calling for new bicycle lanes on Second Street, involving removal of one traffic lane in each direction on Second Street between Market and King Streets, along with some curbside parking, and the creation of bicycle lanes in each direction. Left turns would be prohibited for cars and trucks at most intersections. This specific improvement was removed from the list of initial projects by the Municipal Transportation Agency (MTA) Board of Directors when it initially approved the Bicycle Plan in June 2009 (the version of the Plan approved by the Supervisors), and is the subject of further study and community discussion. The MTA plans additional community meetings in 2010, with a new preferred alternative by 2012.

Better Streets Plan

The City of San Francisco is currently developing a Better Streets Plan, with the aim of creating a unified set of standards, guidelines, and implementation strategies to govern how the City designs, builds, and maintains public streets and rights-of-way.

The main focus of the Better Streets Plan is upon the pedestrian environment and on the most appropriate design for allowing streets to be used as public space. The Better Streets Plan is proposed to consist of two primary elements, the Streetscape Master Plan (SMP) and the Pedestrian Transportation Master Plan (PMP), which may ultimately be combined into a single final plan.

The SMP will include design standards which can be used to guide citywide streetscape design, improving overall quality, aesthetic character, and ecological function of San Francisco's streets while maintaining safe and efficient use of transportation.

Transit First Policy

The City of San Francisco's Transit First policy, adopted by the Board of Supervisors in 1973, was developed in response to the damaging impacts over previous decades of freeways on the City's urban character. The policy is aimed at restoring balance to a transportation system long dominated by the automobile, and improving overall mobility for residents and visitors whose reliance chiefly on the automobile would result in severe transportation deficiencies. It encourages multi-modalism, the use of transit and other alternatives to the single-occupant vehicle as modes of transportation, and gives priority to the maintenance and expansion of the local transit system and the improvement of regional transit coordination.

The following ten principles constitute the City's Transit First policy:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.
2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile.
3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce and improve public health and safety.
4. Transit policy improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve public safety.
5. Pedestrian areas shall be enhanced wherever possible to improve the safety and comfort of pedestrians and to encourage travel by foot.
6. Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.
7. Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.
8. New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments.
9. The ability of the City and County of San Francisco to reduce traffic congestion depends on the adequacy of regional public transportation. The City and County shall promote the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system.
10. The City and County shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service provided by the Municipal Railway. (Added November 1999.)

The proposed project would result in infill development in an existing urban area, encouraging use of transit and alternative transportation modes, and would also increase proximity of jobs to housing within the City. These factors would be expected to help minimize single-person auto travel in the future, which would be consistent with the intent of the Transit First Policy.

Transit Effectiveness Project

The Transit Effectiveness Project (TEP) was undertaken by the Municipal Transportation Authority (MTA) and the San Francisco Controller's Office to review, evaluate, and make recommendations on the Municipal Railway system. The TEP resulted in recommendations to improve service, attract more riders, and increase efficiency. Participants included a Citizen Advisory Committee (CAC); a Policy Advisory Group that includes representatives from the Mayor's office, Board of Supervisors, transit unions, the CAC, MTA Citizens Advisory Council, San Francisco County Transportation Authority, and the Metropolitan Transportation Commission; and a Technical/Regional Advisory Committee that includes representatives from various City departments and local and regional transit agencies will provide technical review and comment. In October 2008, MTA Board of Directors voted unanimously to endorse the TEP recommendations that focus on service factors aimed at increasing customer convenience, including improved reliability, reduced travel time, more frequent service and updated Muni bus routes and rail lines that track with current travel patterns. The full set of recommendations is subject to environmental review prior to implementation. (Because the TEP affects City provision of transportation services, no determination is made relative to project consistency.)

Planning Code (Zoning)

The *San Francisco Planning Code*, which incorporates by reference the City's Zoning Maps, governs permitted uses, densities, and the configuration of buildings within San Francisco. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless either the proposed project conforms to the *Code*, or an exception is granted pursuant to the provisions of the *Code*. The proposed project is located in a C-3-O (SD) District wherein office use is permitted. The C-3-O district is described in *Planning Code* Section 310.3 as consisting primarily of high-quality office development focusing on finance, corporate headquarters, and service industries, and serving as an employment center for the region. It permits office uses and retail sales and personal services uses. Therefore, the project's proposed office units would be a principally permitted use. The Special Development (SD) designation (Sec. 248) constrains development at densities above the base floor area ratio; additional density is allowable only if there is a commensurate reduction in the allowable density of development on other sites in the downtown by the transfer of development rights (TDR) from eligible sites. The C-3-O (SD) District permits a base floor area ratio (FAR) of 6:1. In this district, a maximum FAR of 18:1 is permitted with TDR. The project proposes a FAR of 18:1.

Most of the project site is within the 350-S height and bulk district (350-foot height limit; bulk limits for base, lower, and upper towers per Section 270(d)), although the northwest corner of the site is within a 150-S height and bulk district, which has a height limit of 150 feet. The proposed project would not conform to the *Planning Code* height limit for the portion of the site where the height limit is 150 feet, and rezoning of this approximately 45-foot-wide-by-82-foot, 6-inch-long portion of the site would be required, as well as amendment of the Downtown Plan height map (Map 5) within the *General Plan*. The project sponsor is seeking rezoning of this portion of the site to a 350-S height and bulk district, consistent with the remainder of the project site. Additionally, because the project would exceed bulk limits above the building's base, exceptions to certain bulk requirements (Section 270) would be sought under *Planning Code* Section 309.

The proposed project would comply with the *Planning Code* Section 132.1(c) with regard to separation of towers. The *Code* requirement, based on the building's 350-foot height, is a minimum tower setback of 19 feet from the centerline of adjacent street(s) and from interior property line(s). The project would have a minimum setback of 20 feet from the western interior property line and from all abutting streets.¹³

The proposed project would provide on-site publicly accessible open space in the form of an indoor plaza within the ground floor of the building. *Planning Code* Sec. 138 requires open space be provided at the rate of one square foot per 50 square feet of gross floor area in the C-3 Districts. The proposed project would include approximately 430,650 gross square feet of office space and would thus be required to provide a total of about 8,613 square feet of open space. With 8,650 square feet of common usable open space in a publicly-accessible interior area, the project would exceed the *Planning Code*'s open space requirement. The *Planning Code* considers such enclosed space that is available to the public to be "open space" for the purposes of this requirement.

As noted, the project would not meet the required building bulk limits prescribed by *Planning Code* Section 270, and the project sponsor has applied for an exception to the bulk limits as provided in Section 309 by meeting specifications of *Planning Code* Section 272. The project also would require exceptions from *Planning Code* provisions for Downtown projects in the following areas: ground-level wind current requirements (Section 148), because the project would not reduce existing exceedances of the pedestrian wind speed criterion and would result in exceedances of both the pedestrian and seating comfort criteria; bulk requirements (Section 270), because the project would exceed bulk limits for the building's lower tower; and the requirement to avoid penetration of a specified "sun access plane" above a certain street wall height on Second Street (Section 146).

Planning Code Section 151.1 permits off-street parking up to a maximum of 7 percent of building gross floor area for office uses in the C-3 Districts. The proposed floor area devoted to off-street parking would be 27,930 square feet, which is less than the permitted maximum amount, thereby satisfying the requirements of Section 151.1. *Planning Code* Section 152.1 requires that the proposed project provide four off-street loading spaces.¹⁴ However, Section 153(a)(6) allows the substitution in C-3 Districts of two service vehicle spaces for each required off-street freight loading space, provided that a minimum of 50 percent of the required number of spaces are provided for freight loading. The project proposes two full-size off-street loading spaces on Tehama Street, along with four service vehicle spaces in the basement; together, these spaces would meet the *Planning Code* off-street loading requirement.

The project site is not within a Downtown Conservation District or Redevelopment Area. It is, however, adjacent to the New Montgomery–Second Street Conservation District that is identified in Appendix F to *Planning Code* Article 11.

¹³ The setback on Tehama Street would be 2 feet, 6 inches from the property line and 20 feet from the midpoint of Tehama Street. Setbacks would be greater on Second and Howard Streets, each of which is 82 feet, 6 inches in width.

¹⁴ Calculation: 0.1 space per 10,000 sq. ft. of gross floor area (to closest whole number per Section 153). Thus, $430,650 \div 10,000 \times 0.1 = 4.3$, rounded to four spaces.

Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the *Planning Code* to establish eight Priority Policies. These policies are: (1) preservation and enhancement of neighborhood-serving retail uses; (2) protection of neighborhood character (discussed in Section IV.A, Land Use); (3) preservation and enhancement of affordable housing (Question 1b, Population and Housing, in Section IV.C, Population and Housing, with regard to housing supply and displacement issues); (4) discouragement of commuter automobiles (Section IV.E, Transportation); (5) protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; (6) maximization of earthquake preparedness (Questions 7a –7d, Geology and Soils, in Section IV.N, Geology, Soils, and Seismicity); (7) landmark and historic building preservation (Section IV.D, Cultural Resources); and (8) protection of open space (Questions 3a and c, Recreation, in Section IV.J, Recreation and Public Space, as well as Section IV.H, Wind, and Section IV.I, Shadow). The Priority Policies, which provide general policies and objectives to guide certain land use decisions, contain some policies that relate to physical environmental issues. The proposed project would not obviously or substantially conflict with any such policy. Prior to issuing a permit for any project that requires an Initial Study under CEQA, and prior to issuing a permit for any demolition, conversion, or change of use, and prior to taking any action that requires a finding of consistency with the *General Plan*, the City is required to find that the proposed project or legislation is consistent with the Priority Policies. In evaluating *General Plan* consistency of the project and reviewing the building permit application for the proposed project, the Planning Commission and/or Planning Department would make the necessary findings of consistency with the Priority Policies.

The proposed project would develop a high-rise office building in an area of the downtown which the *General Plan* and *Planning Code* expressly identify as an appropriate location for such development. The project would comply with most *Planning Code* requirements, with certain exceptions regarding bulk, ground-level winds, and sunlight being sought as permitted pursuant to *Planning Code* Section 309. The proposed project would be generally consistent with *General Plan* objectives and policies applicable to the project and its proposed location. The staff report for the Planning Commission will analyze the project's consistency with *General Plan* policies and zoning, and will discuss in detail any exceptions requested or modifications required.

CHAPTER IV

Environmental Setting, Impacts, and Mitigation Measures

A. Land Use

This section presents a discussion of existing land uses at the project site and in the vicinity, and describes how the proposed project could change the physical arrangement of land uses on the project site, to the extent that such changes would have the potential to disrupt and divide the neighborhood or have an adverse impact on the character of the site's vicinity.

Setting

Project Site

The project site is currently occupied by a 23,925-sq.-ft. parking lot, which is used to provide primarily short-term parking, with approximately 70 marked spaces and an observed capacity for approximately 125 vehicles with valet operations. Although several small commercial buildings were erected on the site following the 1906 earthquake and fire, the project site was in use for automobile parking as early as the 1930s, according to photographic evidence: a photograph dated 1934, reproduced in the project archeological report, shows the project site in use as a parking lot, along with a small gasoline station and a sandwich shop.¹⁵ During the early 1990s, after a prior proposal for office development was abandoned by a previous property owner, the project site was fenced off and inaccessible, but surface parking was reintroduced later in the decade and continues to the present.

Project Vicinity

In the immediate site vicinity there is a mix of uses including residential, office, and hotel buildings, many with ground-floor retail. Office use is clearly predominant, however, in most of the buildings in the area. Although there are a few high-rise structures, mid-rise buildings (generally, three to eight stories) predominate, with most buildings along both sides of Second Street between Market Street to the north and Folsom Street to the south being devoted to office use on the upper stories and retail and restaurant uses on the ground floor, in a pattern typical (albeit in smaller structures) of much of downtown San Francisco.

¹⁵ William Self Associates. *Final Historical Context Statement, Archaeological Research Design, Monitoring and Treatment Plan, 222 Second Street Project, San Francisco*. September 2007. This report is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

Much of the area north, east, and west of the project site consists of early 20th century development, as described in Section IV.D, Cultural Resources, and thus reflects the scale of that era.) Because it retains, for the most part, these century-old buildings, and because these older buildings were developed primarily to house office support uses such as printers and binderies, as well as wholesaling, retailing and small offices, the buildings possess more simplified design and less detail than many historic downtown structures, including the larger buildings a block west on New Montgomery Street. As a result, Second Street presents a somewhat utilitarian character, but with a comfortable pedestrian scale owing to the width of the street and the fact that few buildings between Market and Howard Streets exceed five stories. Ground-floor spaces today are devoted to a mix of dining establishments that serve neighborhood office workers and small retail stores.

A similar pattern of office over retail and restaurant uses prevails on New Montgomery Street between Market and Howard Streets; as described in more detail in Section IV.D, Cultural Resources, New Montgomery evolved first as an extension of the north-of-Market Street Financial District, with Second Street not substantially developed until after completion of the so-called Second Street Cut that extended Second Street to the South Beach waterfront. New Montgomery Street, because it is relatively narrow and because the buildings are taller than on Second Street, possesses more of the “office canyon” atmosphere of its north-of-Market Street namesake.

Land uses are somewhat more varied on Howard Street, with a mixture of office uses—in some cases occupying former industrial or warehouse-type buildings—and remaining light industrial uses (known currently in San Francisco as “production, distribution, and repair,” or PDR uses) and a sprinkling of art galleries (also a PDR use) and residential and live-work buildings. Because Howard Street is a major traffic artery and because the buildings lining it are generally smaller in scale and contain fewer active ground floor uses, the street has less pedestrian ambiance than either Second or New Montgomery Streets. Figure 7 depicts land uses in the project vicinity.

Larger office buildings in the project area include a 26-story office building at 101 Second Street (at Mission) that was built in 2000; a 25-story office building at 55 Second Street (2002); a 33-story office building at 555 Mission Street, between First and Second Streets (2008); a 20-story office building at 75 Hawthorne Street (largely occupied by federal government offices); 12-story office buildings at 201 Third Street (Convention Plaza) and 666 Folsom Street; a 10-story building at 55 Hawthorne Street; and the 10-story, block-long Marathon Plaza office complex at 303 Second Street. A 27-story office building was approved in 2007 at 535 Mission Street, between First and Second Streets, and construction began in 2008 but was suspended. Most of these buildings also have (or will have) ground-floor retail and/or restaurant uses. The 26-story Pacific Telephone Building at 140 New Montgomery Street, formerly headquarters of that company, has recently been approved for conversion to residential use.

There are several educational and other institutional uses in the project vicinity, including Yerba Buena Center, San Francisco Fire Department Station No. 1 on Howard Street, the San Francisco Museum of Modern Art on Third Street, Golden Gate University on Mission Street, and two buildings of the Academy of Art University on New Montgomery Street, along with an 18-story AT&T switching facility



1st St

2nd St

Hawthorne St

3rd St

4th St

Harrison St

SOURCE: ESA

Case No. 2006.1106E: 222 2nd Street (206337)
Figure 7
 Existing Land Use
 in Project Vicinity

at 611 Folsom Street. There are also a number of hotels nearby, including the 30-story W Hotel at Third and Howard Streets, a portion (the upper 20 stories) of the 40-story St. Regis tower at Third and Mission Streets, and the 18-story Courtyard Marriott hotel at 299 Second Street (at Folsom).

Residential (including live-work) uses in the project vicinity are all relatively newly developed. These include the nearest residential units, in a 16-story building at 199 New Montgomery Street (approximately 170 units; built in 2004, according to Assessor's data) and a 17-story building at 246 Second Street (90 units; 2000), in a recently completed (2009) 21-story building at 631 Folsom Street (known as "Blu"), and in live-work projects at 580 Howard Street (14 units; 2000) and 85 Natoma Street (9 units; 2001), all of which are within half a block of the project site. A 24-story residential building is under construction at One Hawthorne Street, on the project block. Other residential uses within about one block of the project site include approximately 20 units in two buildings on Clementina Street between First and Second Streets, a former office building converted to residential use at 74 New Montgomery Street, and several larger projects within the Yerba Buena Center Redevelopment Area (the residential portion of the St. Regis tower and the 40-story Paramount, both at Third and Mission Streets, and two mid-rise buildings at Third and Folsom Streets, St. Francis Place and Museum Parc).

In addition, a residential building of 19 stories was approved in 2006 at 201 Second Street (across from the project site), although construction has not begun on that project. Figure 7 shows the location of these residential uses.

As discussed in Chapter III, the project site is within the proposed Transit Center District Plan area (a draft plan was released by the Planning Department in November 2009), currently being drafted by the Planning Department, and is also within the adopted Transbay Redevelopment Plan Area. One of the major goals of the proposed Transit Center District Plan is to ensure that there is sufficient growth opportunity for high-density jobs in the downtown core, immediately proximate to the region's best transit service. Therefore, if the Plan is adopted, it can be assumed that the area's land use pattern, with office uses predominant, would not change.

Impacts

Significance Criteria

A project would have a significant effect on the environment in terms of Land Use if it would:

- Physically divide an established community,
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating and environmental effect, or
- Have a substantial adverse impact on the existing character of the vicinity.

A conflict between a proposed project and a *General Plan* policy does not, in itself, indicate a significant effect on the environment within the context of the California Environmental Quality Act (CEQA). The staff report for the Planning Commission will contain the Planning Department's full analysis of the project's consistency with *General Plan* policies and zoning, and will discuss any exceptions requested or

modifications required.¹⁶ Thus, the impact analysis does not evaluate planning inconsistencies, although physical environmental impacts that could result from such conflicts are analyzed elsewhere in this EIR.

Impact Analysis

Impact LU-1: The project would neither divide an established community, nor have a substantial adverse impact on the character of the site or vicinity, either individually or cumulatively. (Less than Significant)

As described above, the project area is characterized by a mix of uses, with office uses over ground-floor retail stores and restaurants predominating. The proposed project, a new office building of approximately 430,650 gross square feet with ground-floor restaurant/retail space, would result in an increase in intensity of existing land uses at the project site and in the project vicinity; the new building would be 26 stories and cover approximately 90 percent of the project site, with the remainder devoted to circulation (the garage ramp). However, the project would not alter the general land use pattern of the immediate area, which includes several newer high-rise office buildings and many more, older mid-rise office structures. Thus, the proposed project would change the character of the project site, but would not adversely alter the existing mix of uses in the project area. Given the prevailing uses in the vicinity, the change in character of the project site would not result in an adverse physical impact. The project would also not physically divide an established community, since it would be achieved within the existing block configuration.

As noted above, there are a number of high-rise buildings in the project vicinity, including two office towers built in the past eight years in the two blocks of Second Street north of the project site. The proposed new building, at 26 stories and approximately 350 feet in height, would be taller and more massive than the mostly three- to eight-story structures along Second, New Montgomery, and Howard Streets, but would be comparable in scale to the approximately 265-foot-tall residential tower nearing completion to the west, at One Hawthorne Street, and to office towers located within a block of the project site, including the Pacific Telephone Building at 140 New Montgomery Street (approved for conversion to residential use) and 55 and 101 Second Street, as well as the W Hotel at Third and Howard Streets. The proposed 222 Second Street building would be six stories taller than the nearby office building at 75 Hawthorne Street and would be approximately twice the height (in feet, but not in stories, given that office buildings typically have greater floor-to-floor heights than residential and hotel structures) of the nearest residential high-rises, at 246 Second Street and 199 New Montgomery Street, as well as the Courtyard Marriott Hotel at Second and Folsom Streets. Nevertheless, because it would continue an existing pattern of office uses predominating along the Second and New Montgomery Streets corridor, the proposed project would not result in a substantial change in the existing character of the vicinity. (Visual effects are assessed in Section IV.B.) Moreover, as described more fully in Chapter III, Compatibility with Existing Zoning and Plans, the proposed project would be consistent with a fundamental concept of the City's Downtown Plan calling for expansion of major office uses to the area around the Transbay Terminal.

¹⁶ Plan and zoning consistency is discussed in this document in Chapter III, Compatibility with Existing Zoning and Plans.

Cumulative Impacts

As of January 2010, as many as a dozen additional high-rise and/or sizable projects are proposed within the project vicinity: the Transbay Joint Powers Authority (TJPA) proposes to construct an approximately 1,000-foot-tall tower adjacent to the planned new Transbay Transit Terminal on Mission Street, and is also considering high-rise development of a second TJPA-owned parcel on Howard Street between First and Second Streets. The Planning Department either has applications on file, or has had preliminary discussions with developers, for towers at 50 First Street (two towers, an 850-foot, office tower fronting on First Street and a 550-foot residential tower fronting on Mission Street, along with retail space on the ground floor of each), 350 Mission Street (27-story, 345-foot-tall office building), 181 Fremont Street (877-foot, 65-story residential and office tower), 41 Tehama Street (400-foot, 39-story residential building), the Palace Hotel at New Montgomery and Market Streets (690-foot, 60-story residential tower at the non-historic southwestern corner of the existing hotel), and the southwest corner of Third and Folsom Streets (mixed-use project potentially containing two towers, along with hotel and convention space). In addition, the Planning Department and the San Francisco Redevelopment Agency are evaluating a proposed 605-foot-tall, residential tower at the northeast corner of Third and Mission Streets that would also rehabilitate the historic Aronson Building and provide a new location for the Mexican Museum, while the San Francisco Museum of Modern Art has announced plans for an expansion structure—which may include a tower—on Howard Street, southeast of the existing museum building on Third Street. Beyond these proposed projects, an office building has been approved and construction started and then halted at 535 Mission Street, while there is a long-approved 23-story office building at 524 Howard Street. Additionally, Golden Gate University has publicly discussed future plans for a tower at its Mission Street campus.

Implementation of the above projects and the proposed 222 Second Street project would continue the southward shift of San Francisco's downtown core towards the area surrounding the Transbay Terminal, a process which has been under way since adoption of the Downtown Plan in 1985. The residential components of some of the proposed new towers would also help implement one of the goals of the adopted Transbay Redevelopment Plan (discussed in detail in Chapter III, Compatibility with Existing Zoning and Plans), "Develop a new downtown neighborhood to help address the city's and the region's housing crisis, support regional transit use, and provide financial support to the future Transbay Terminal, including access ramps and the temporary terminal facility, and Caltrain Downtown Extension." However, as several of the proposed towers would exceed the existing permitted height limits, and in order to direct some financial benefit from the potential increase in permitted height and density limits toward the new terminal program and other infrastructure improvements, the Planning Department is currently undertaking a new planning effort for the terminal area, called the Transit Center District Plan, which will require a programmatic evaluation of environmental impacts of any potential development beyond existing controls (see discussion in Chapter III). In addition, appropriate levels of project-specific environmental review are required for each proposed new building. Notwithstanding the potential for taller buildings than are currently permitted, the planned additional high-rise buildings in the project vicinity would not substantially and adversely alter the prevailing mix of land uses that is dominated by office development and includes residential, hotel, and cultural uses along with ground-floor retail and restaurants.

In light of the foregoing, the proposed project would not result in a significant effect with regard to land use, either individually or cumulatively.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

B. Aesthetics

This section discusses the existing visual character of the project site as well as views of the site from various public vantage points, and analyzes the potential for the proposed project to affect existing site character and views. Information for the discussion and subsequent analysis is drawn from site visits, project plans and photomontages developed for the project which illustrate the future visual characteristics of the project in the existing setting, as well as under potential future cumulative conditions.

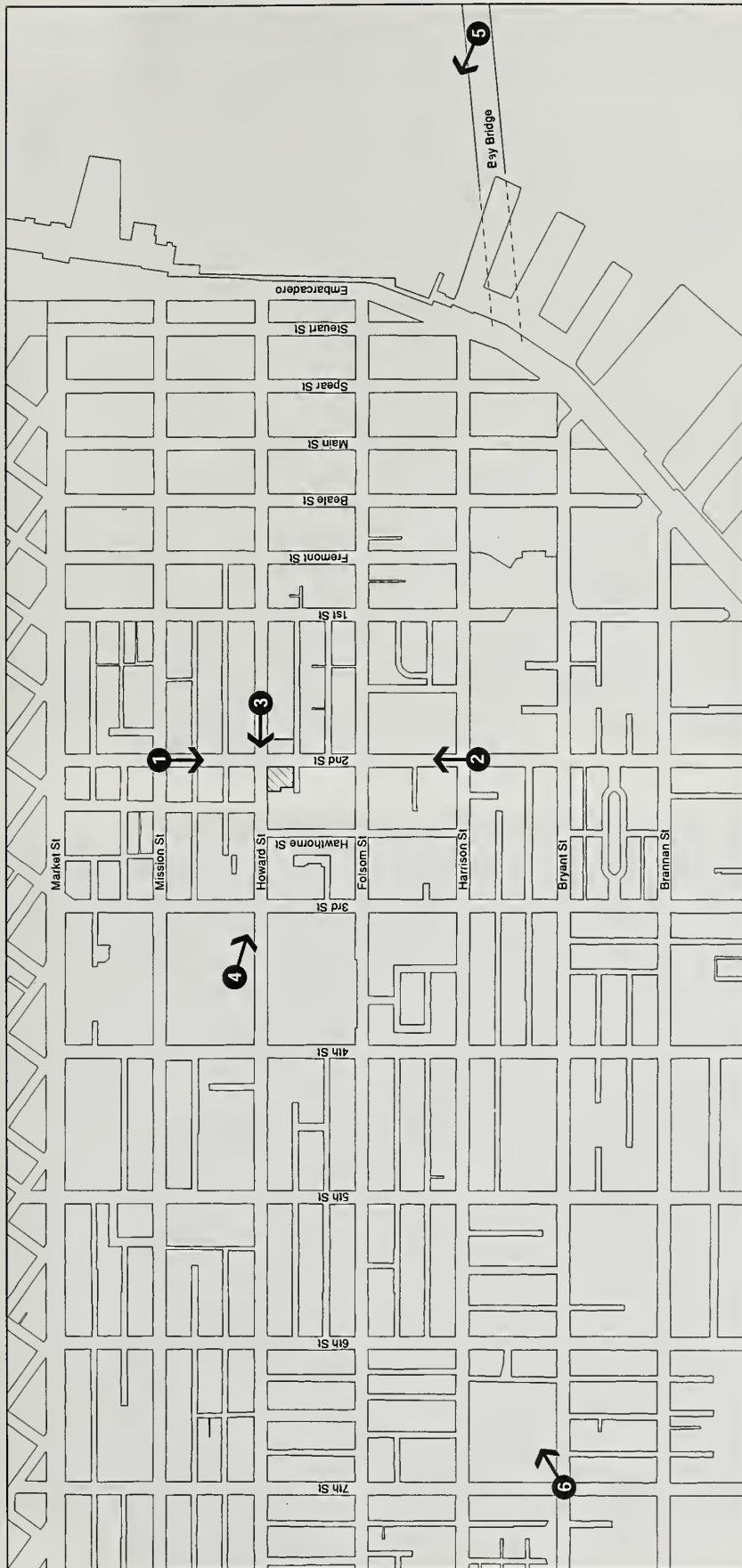
Setting

The existing project site consists of a surface parking lot bounded by a chain link fence and low-lying shrubs. The lot is unoccupied by buildings aside from a small kiosk for parking attendants. The project site occupies the northeast corner of the block bounded by Howard, Second, Third, and Folsom Streets. Howard and Second Streets border the project site to the north and east, respectively (using San Francisco convention that assumes Market Street and streets parallel to it run east-west). Immediately to the west of the project site is 631 Howard Street, which provides the southern visual terminus of the New Montgomery–Second Street Conservation District, an area occupied generally by three- to eight-story buildings largely faced in masonry. Further west of the project site are the nearly complete 24-story One Hawthorne residential project, and the 12-story Convention Plaza (201 Third Street) and 30-story W Hotel on either side of Howard Street at the intersection of Third Street. To the immediate south, across Tehama Street, is the two-story, white-marble-clad Marine Firemen’s Union hall at 240 Second Street. Further south on the project block stands 246 Second Street, a 17-story residential tower. Other taller buildings in the immediate vicinity include the 16-story 199 New Montgomery Street residential building at New Montgomery and Howard, the 18-story Courtyard Marriott Hotel at Second and Folsom Streets, and the 20-story office tower at 75 Hawthorne Street, which is located on the project block.

Directly to the east of the site, across Second Street, is another surface parking lot with generally low two- to four-story buildings occupying the adjacent lots. To the north, across Howard Street, is a six-story building, followed by several mid-rise buildings farther north as one approaches the financial district. The 199 New Montgomery Street residential building is just northwest of the site. A newly built 21-story residential building (“Blu”) is located at 631 Folsom Street, about one block south of the project site.

Photographs of the project site and vicinity from various vantage points—depicted in Figure 8—are presented in Figures 9 – 14, pp. 39 – 44. (Figures 9 – 14 also present photomontages of the proposed project that are discussed in the impact analysis, below.)

The project site is not readily visible in mid-range and long-range views because of the generally taller surrounding structures. It is, however, visible from short range views and where streets provide view corridors from vantage points one to two blocks away (see upper images in Figures 9 and 10, pp. 39 and 40, which show the site under existing conditions as viewed from the north and south, respectively, on Second Street, and in Figure 11, p. 41, which shows the site viewed from the east on Howard Street). In





Existing Setting

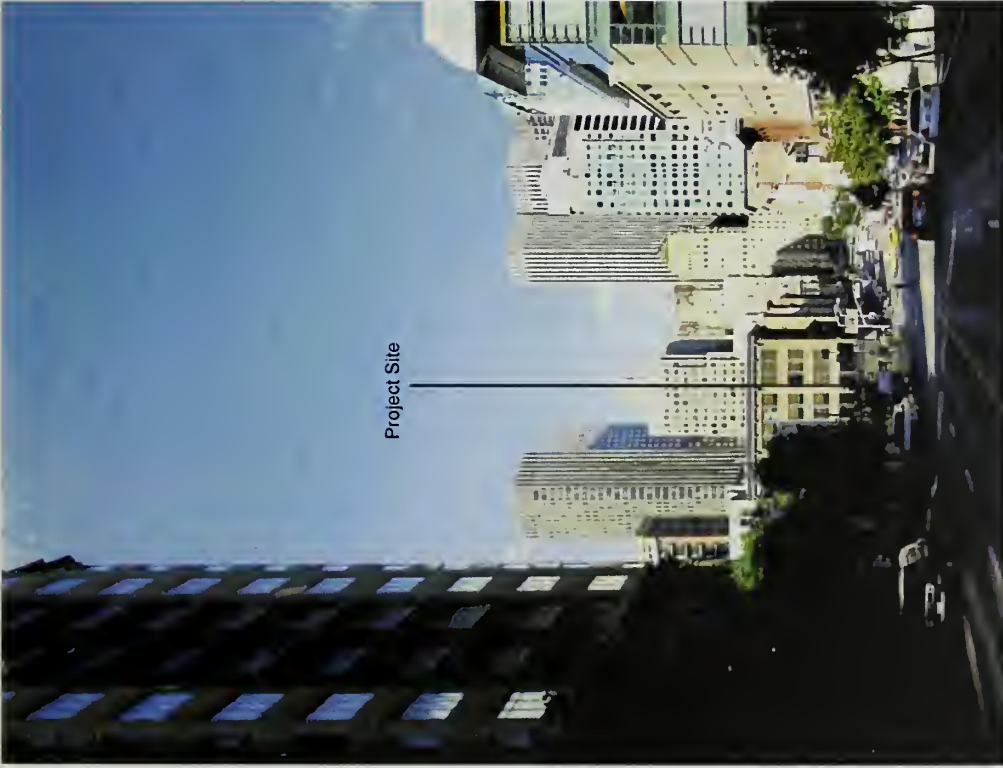


Visual Simulation

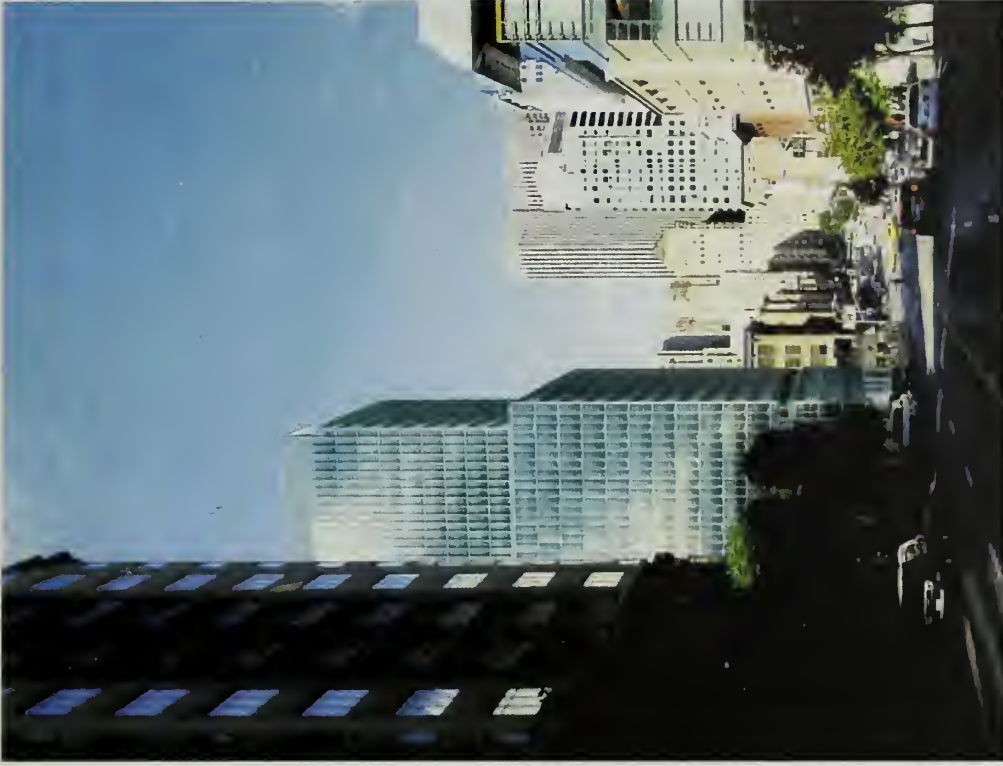
SOURCES: Thomas Phifer and Partners; Heller Manus Architects

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Figure 9
Viewpoint 1: Looking South from
Second and Mission Streets



Existing Setting



Visual Simulation

SOURCES: Thomas Philter and Partners; Heller Manus Architects

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Figure 10
 Viewpoint 2: Looking North from
 Second and Folsom Streets



Existing Setting

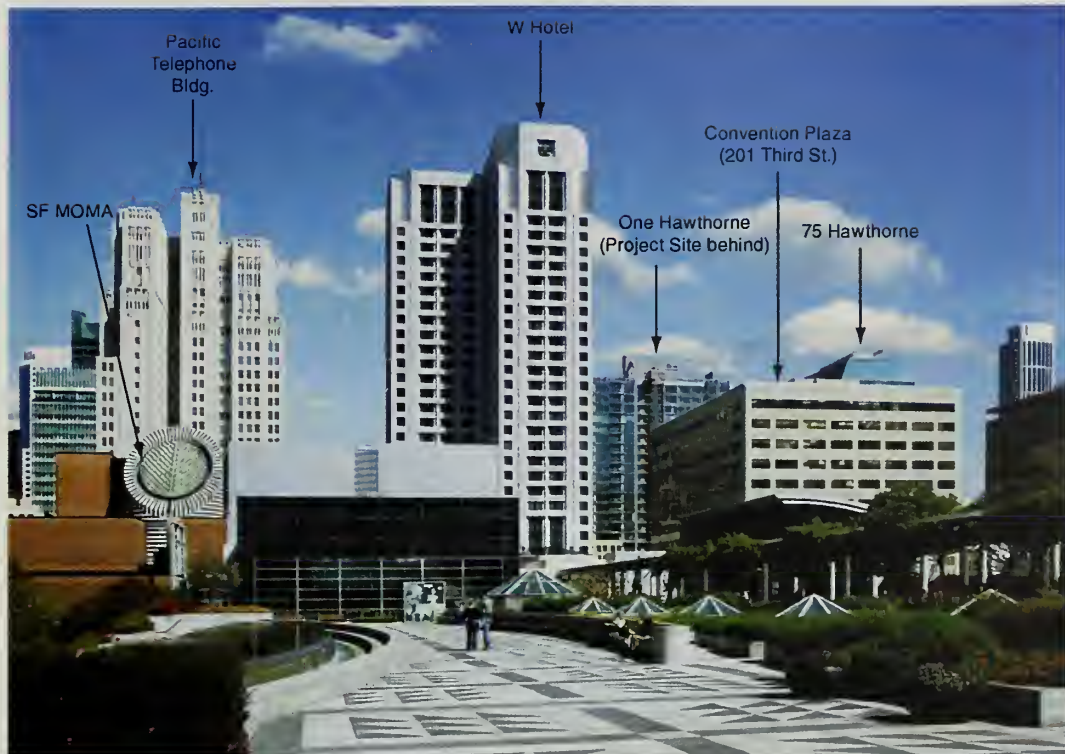


Visual Simulation

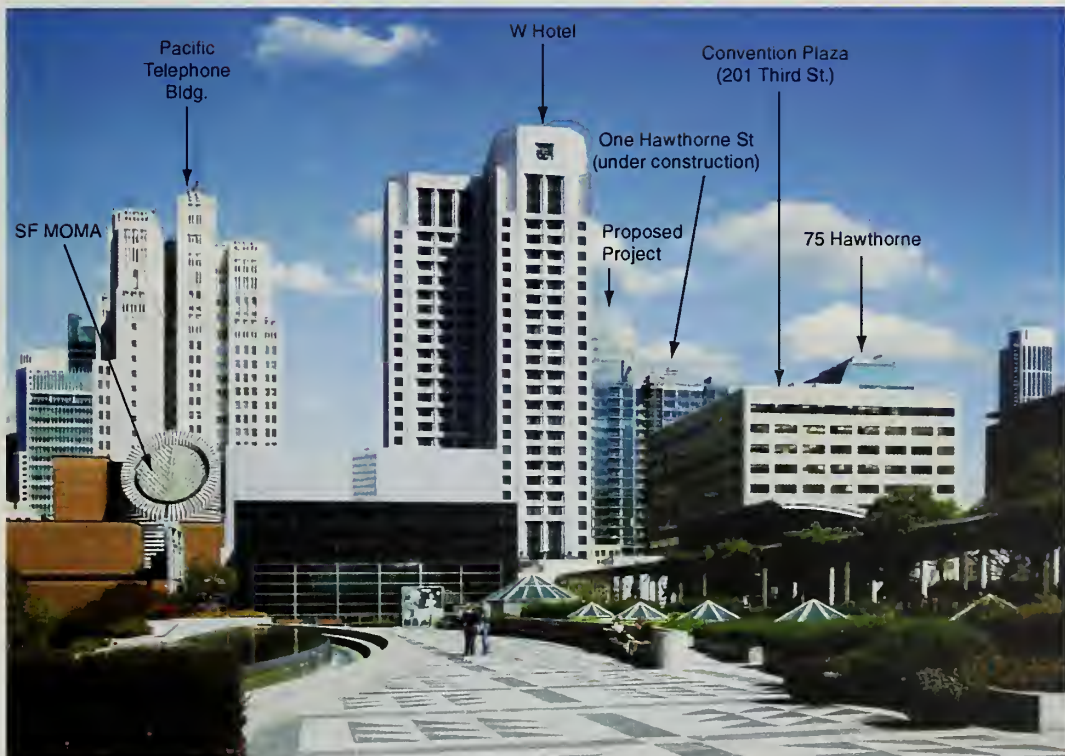
SOURCES: Thomas Phifer and Partners; Heller Manus Architects

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Figure 11
Viewpoint 3: Looking West from
Howard Street



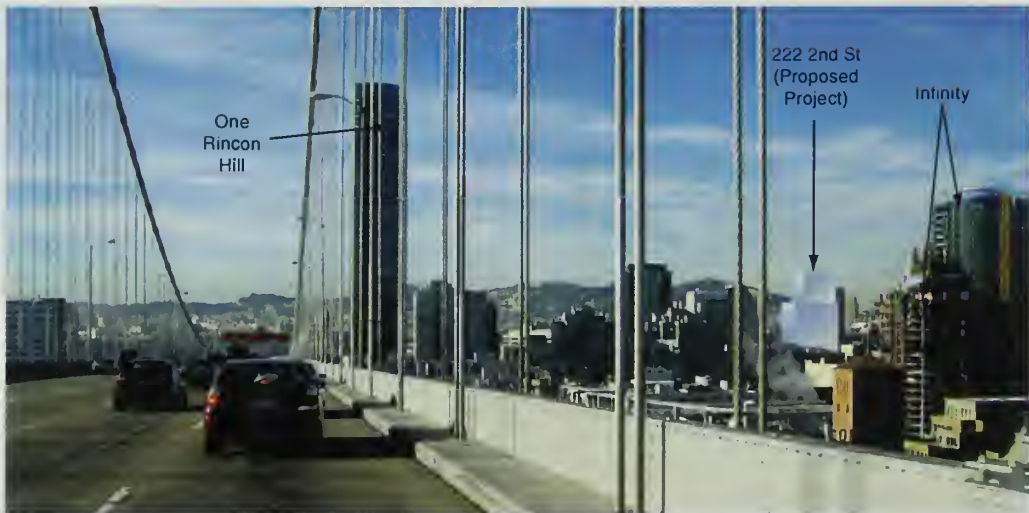
Existing Setting



Visual Simulation



Existing Setting



Visual Simulation (Proposed Project)



Visual Simulation (Cumulative Scenario) Proposed Project Obscured by Other Buildings

SOURCES: Thomas Phifer and Partners; Heller Manus Architects

Case No. 2006.1106E: 222 2nd Street (206337)

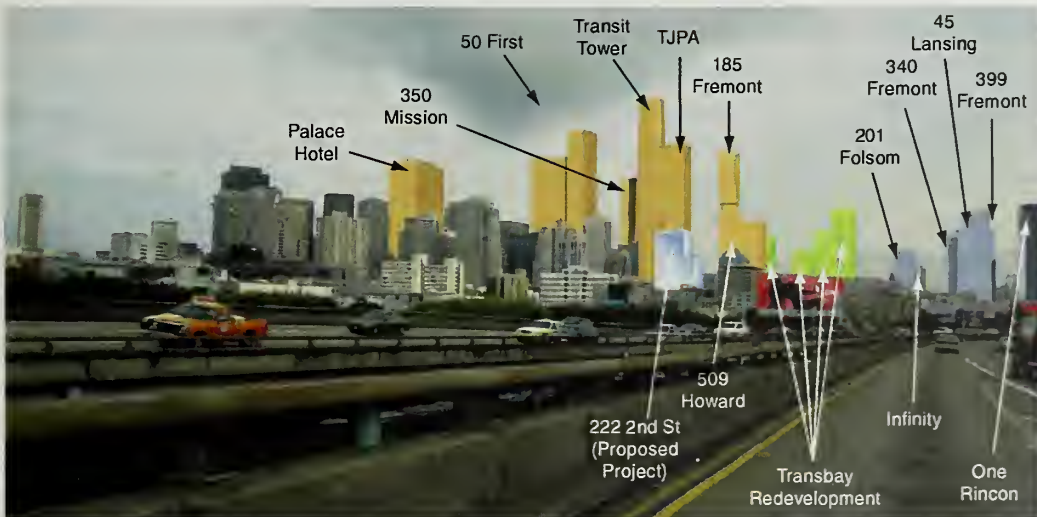
Figure 13
Viewpoint 5: Looking West from
Bay Bridge



Existing Setting



Visual Simulation (Proposed Project)



Visual Simulation (Cumulative Scenario)

SOURCES: Thomas Phifer and Partners; Heller Manus Architects

Case No. 2006.1106E: 222 2nd Street (206337)

Figure 14
Viewpoint 6: Looking East from
7th and Bryant Streets

longer-range views, the project site is not readily discernible (see upper images in Figures 12 and 13, pp. 43 and 44).

Impacts

Significance Criteria

The project would have a significant effect on the environment in terms of Aesthetics if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and other features of the built or natural environment which contribute to a scenic public setting;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of light or glare which would adversely affect day or nighttime views in the area or which would substantially impact other people or properties.

Impact Analysis

Impact AE-1: The project would not adversely affect a scenic vista, nor substantially damage scenic resources, nor substantially degrade the existing visual character or quality of the site and its surroundings, nor create new light or glare that would adversely affect views or other people or properties, either individually or cumulatively. (Less than Significant)

The proposed project would result in a visual change, since it would result in removal of the existing surface parking lot and construction of a 26-story (plus mechanical penthouse), approximately 370-foot-tall (including mechanical penthouse and screen) building that would also include ground-level public open space. The project would not substantially damage any scenic resources, as no such resources exist on the project site or in the immediate vicinity.

The project's façade would be clad in an energy-efficient insulated glass unit curtain wall. The glass would have a slight tint owing to its energy-efficient properties. The ground floor exterior would be differentiated by a pattern of larger, clear glass panels, including full-height doors along Howard Street that would slide open to provide access to the public open space inside. The ground floor glazing would be divided by wide columns and topped by a belt course that would delineate the top of the ground floor.

The building façade would be set back at various intervals of height on each of the four facades. At the fifth floor, about 60 feet above street grade, the north façade of the building would be set back 5 feet from Howard Street and the west façade would be set back approximately 20 feet from the westerly property line. At the 17th story (about 220 above grade), the east façade would be set back 24.5 feet from Second Street, and the south façade would be set back 44.5 feet from Tehama Street. In addition, the fifth floor would include a further 5-foot recess, or "reveal," on all four facades, intended to emphasize a visual break above the first four stories of the building and thereby establish a sense of continuity with nearby historic structures by responding to prevailing cornice line heights. Although the project site extends 162.5 feet along Second Street and 155 feet along Howard Street, these setbacks would create the effect of a less bulky building as the height increases, compared to a building of similar footprint but with an

undifferentiated street wall to the top of the building. This diminishing bulk with increasing height would generally be consistent with the urban design direction contained in the Downtown Plan.

The project's proposed restaurant/retail component would occupy the ground floor at the corner of Second and Tehama Streets. Publicly accessible interior open space would be located along the Howard Street (northern) portion of the building's ground floor lobby. Other visible features at the pedestrian level would include the parking garage entry and the loading dock, both on Tehama Street.

The proposed new building, at 26 stories and approximately 350 feet in height (about 370 feet with mechanical penthouse), would be taller and more massive than the mostly three- to eight-story structures along Second, New Montgomery, and Howard Streets, including buildings in the New Montgomery–Second Street Conservation District (see visual simulation in Figures 9 and 11, pp. 39 and 41), but would be comparable in scale to the approximately 265-foot-tall residential tower nearing completion to the west, at One Hawthorne Street, and to office towers to the north, including the Pacific Telephone Building at 140 New Montgomery Street (approved for conversion to residential use) and the 101 Second Street building, as well as the W Hotel at Third and Howard Streets (see Figure 12, p. 42). The proposed 222 Second Street building would be six stories taller than the nearby office building at 75 Hawthorne Street and would be approximately twice the height (in feet, but not in stories, given that office buildings typically have greater floor-to-floor heights and to residential and hotel structures) of the nearest residential high-rises, at 246 Second Street and 199 New Montgomery Street, as well as the Courtyard Marriott Hotel at Second and Folsom Streets (see visual simulation in Figure 10, p. 40).

The project would be part of the growing number of high-rise buildings located south of Market Street in the vicinity of the Transbay Terminal. The 26-story building would be taller than other high-rise and mid-rise buildings currently developed on the project block, including One Hawthorne Street, 75 Hawthorne Street and 580 – 590 Folsom Street, and would be taller than the properties currently entitled to be developed at 201 Second Street, a 19-story residential development approved across Second Street from the project site. Of these nearby buildings, the project would be closest in horizontal dimensions to the building at One Hawthorne Street.

With its facades of overlapping glass panels interrupted by internal horizontal rails of metal, the proposed building would appear as a largely glazed rectilinear mass, and would be differentiated from other nearby structures, which are typically clad with brick and feature “punched” windows (in the case of older buildings) or with a combination of masonry panels and glass (in the case of newer structures). (However, the proposed project would be consistent with the tower facades of One Hawthorne Street, although that building includes masonry cladding on its seven stories above the ground floor.) The proposed project's glass facade would give the project a more visually permeable appearance than many of its neighbors, and would thus add variety to mid- and long-range views of downtown.

The proposed project would have greater bulk than nearby structures, and the placement of its upper tower above the northwest corner of the project's lower tower would create a somewhat unusual form, with the upper tower set back a greater distance from the east and south than from the north and west (see Figures 9 – 14, pp. 39 – 44). The project sponsor would seek an exception to the bulk requirements of

Planning Code Section 270 because the project would exceed bulk limits above the building's base, in the lower tower, where the average and maximum floor plate and the maximum plan dimension all would exceed that permitted under Section 270. (The upper tower would comply with Section 270 bulk limits.)

The proposed project would introduce a new element to the skyline of the southern Financial District. The project would be farther south on Second Street than any of the recently built high-rise office buildings, which are clustered between Market and the south side of Mission Street; it would also be the tallest building between Mission Street and Rincon Hill, with the exception of the 199 Fremont Street tower and the Intercontinental Hotel at 888 Howard Street (at Fifth Street), each of which is approximately the same height as the proposed 222 Second Street building. As such, the proposed building would be readily apparent in views to the south from viewpoints between Market and Howard Streets, such as illustrated in Figure 9, p. 39. Likewise, the building would stand out on the skyline in close-range views to the west, where there are few buildings as tall (see Figure 11, p. 41). However, the proposed project would not stand out when viewed against other high-rises in downtown San Francisco; rather, the new building would tend to blend into the background created by surrounding development when seen from longer-range vantage points (see Figures 12 – 14, pp. 42 – 44). Therefore, the project would not result in a substantial adverse effect on views of the San Francisco skyline.

The project would comply with Planning Commission Resolution 9212, which prohibits the use of mirrored or reflective glass. The building would be partially lighted at night, consistent with energy conservation measures included in the project's LEED Gold rating, but would not be expected to result in substantially more spillover light than is common and accepted in an urban area, nor substantially more than is the case under existing conditions in the larger project vicinity. Thus, the project would not produce light or glare adversely affecting other properties.

The proposed project would involve a substantial change in the character of the project site. Nevertheless, visual quality is subjective, and given the project's location in a developed high-density downtown urban setting, it can be concluded that the proposed building would not substantially degrade the existing visual character of the site and its surroundings. Thus, the change in visual character of the project site would not be considered to "substantially degrade" the character, and the impact would be less than significant.

The nearest major public open space is Yerba Buena Gardens, located about one and a half blocks west of the site along Howard Street. The project would be visible from Yerba Buena Gardens behind a foreground of other high-rise buildings, such as the 26-story Pacific Telephone Building, the 30-story W Hotel, the 24-story One Hawthorne building, the 12-story Convention Plaza building at 201 Third Street, and the 20-story building at 75 Hawthorne Street. The project would not substantially alter the view from Yerba Buena Gardens because it would be part of this group of buildings of generally comparable height and bulk (see Figure 12, p. 42). The project would also be partially visible from publicly accessible, privately owned open spaces, including nearby plazas such as the 100 First Street sun terrace, the sunken terrace at Golden Gate University and the privately owned, publicly accessible open spaces located adjacent to office buildings at 555 Mission Street and 560 Mission Street. However, because of intervening buildings, the view of the project from these areas would include only the upper stories of the project. Moreover, the project would appear as one of many mid-rise and high-rise buildings

in the vicinity and, as such, would not adversely affect a scenic vista, nor substantially damage scenic resources, nor substantially degrade the visual character or quality of the area. As such, the impact would be less than significant.

As can be seen in the visual simulations in Figures 9 through 12, pp. 39 – 42, the proposed project would alter views of the project site. However, to the extent that the project would alter longer-range views, the project would obscure portions of other relatively distant buildings, and would therefore not result in an adverse effect on a scenic vista. Therefore, the impact would be less than significant.

Cumulative Impacts

The project would be constructed within an increasingly densely built urban area around the Transbay Terminal. Although the proposed project's additional development height at the project site, compared to existing conditions, would be visible from surrounding buildings, the project would not obstruct any publicly accessible scenic views or have a substantial adverse effect on a scenic vista. In longer range views, such as from the Bay Bridge (see Figure 13, p. 43), and from the elevated I-80 freeway (see Figure 14, p. 44), the project would appear against a backdrop of other, much taller, high-rise office towers currently proposed for the Transbay Redevelopment Project Area (and proposed Transit Center Area), as described in Section IV.A, Land Use, p. 35, and those currently under construction and approved in the Rincon Hill Area.¹⁷

The development of the proposed office tower at 222 Second Street would therefore not substantially affect aesthetics either individually or cumulatively by blocking any scenic vista currently enjoyed from public open spaces in the area or result in a cumulative adverse effect on the visual character of the project site or vicinity. From long-range vantage points, such as the Bay Bridge and elevated I-80 freeway, the project would appear similar to or smaller than a number of existing and planned high-rise buildings in the general vicinity. From mid-range views, the project would appear compatible with the surrounding urban setting. Although contemporary in its architectural expression, the proposed project would connect visually to the existing aesthetic character of buildings in the site vicinity. Therefore, the project would not have significant cumulative aesthetics impacts.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

¹⁷ The visual simulations in Figures 13 and 14 include a separate image that depicts cumulative development approved in the Transbay Redevelopment Area and the Rincon Hill Plan area, as well as the planned Transit Tower, another site controlled by the Transbay Joint Powers Authority (TJPA), and other high-rise buildings in the proposed Transit Center District Plan area.

C. Population and Housing

Setting

San Francisco consistently ranks as one of the most expensive housing markets in the United States. San Francisco is the central city in an attractive region known for its agreeable climate, open space and recreational opportunities, cultural amenities, strong and diverse economy, and prominent educational institutions. As a regional employment center, San Francisco attracts people who want to live close to where they work. These factors continue to support strong housing demands in the City. New housing to relieve the market pressure created by the strong demand is particularly difficult to provide in San Francisco because the amount of land available is limited, and because land and development costs are high. An estimated 330,000 households resided in San Francisco in 2000. By 2025, San Francisco households are expected to increase by 35,000 households, nearly an 11 percent increase.¹⁸ San Francisco's employment is projected to grow from about 635,000 employees in 2000 to about 760,000 employees in 2025, an increase of 20 percent.¹⁹

Impacts

Significance Criteria

The project could have a significant effect on the environment if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing units or create demand for additional housing, necessitating the construction of replacement housing; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

In general, if a project would result in none of the foregoing, it would not have a significant impact with respect to population and housing. If the project would result in one or more of the foregoing changes, then further analysis would be necessary to determine if the change would result in a physical alteration such that the environment would be adversely affected.

¹⁸ San Francisco Planning Department growth forecasts, cited in *Eastern Neighborhoods Rezoning and Area Plans EIR*, Case No. 2004.0160E; Final EIR certified August 7, 2008. ¹

¹⁹ Planning Department growth forecasts, cited in Note 18.

Impact Analysis

Impact PH-1: The project would not induce substantial population growth, displace existing housing or people, or create substantial demand for additional housing, either individually or cumulatively. (Less than Significant)

The project would construct a new office building with approximately 453,000 square feet of office and restaurant/retail space (430,650 square feet of gross floor area, measured according to the *Planning Code*, and about 522,350 square feet of total building area). Demolition of the existing parking lot on site would not necessarily displace the up to four service employees who currently work on the site, as the project would provide a valet operated parking facility of similar capacity to that provided at the existing site. At full occupancy, the project would house about 1,625 office employees and about 15 restaurant/retail employees.²⁰ Some of these would likely be new employees; some would relocate from other San Francisco office buildings. Therefore, project-related employment growth would constitute about 1.3 percent of citywide employment growth by the year 2025, assuming that all employees in the project would be new to San Francisco; in reality, some workers at the project will be likely to have relocated from other jobs in San Francisco. This potential increase in employment would be minimal in the context of the total employment in greater San Francisco.

Based on a nexus study prepared for the Jobs-Housing Linkage Program (*Planning Code* Secs. 313 *et. seq.*), the project would create a demand for about 555 new dwelling units in San Francisco, assuming that all employees at the project were new to San Francisco.²¹ (As noted above, some workers at the project will be likely to have relocated from other jobs in San Francisco.)

This demand for 555 dwelling units would add to existing strong housing demand in the City. Housing demand in and of itself is not a physical environmental effect, but an imbalance between local employment and housing can lead to long commutes with traffic and air quality impacts. Traffic and air quality issues are both analyzed in this EIR. Some employees of the project who could afford to purchase or rent market-rate housing in San Francisco would be likely to live in San Francisco, while others would choose to live elsewhere in the Bay Area. Many others would not be able to afford to live in the City. For example, based on Census 2000 data, the greatest number of workers living in San Francisco worked in office and administrative support capacities, and these employees had a median annual wage of just over \$38,000. On the other hand, the second largest number of workers living in San Francisco were in management occupations, earning a median of more than \$111,000.²² Employees who could not afford market-rate housing would be forced to look for housing elsewhere, and would not have the option of

²⁰ Employment calculations in this section are based on the City of San Francisco *Transportation Impact Analysis Guidelines*, which estimate an average density of 350 square feet per employee assigned to restaurant/retail space (about 4,600 square feet of total floor area), and 276 square feet per employee assigned to office uses (about 448,000 square feet of total floor area).

²¹ This method uses the estimated project-related increase in employment (1,640 employees) by the fraction of San Francisco employees who live in the City (55%). This result, the approximate number of project-related employees who would live in the City (902), is divided by the average number of San Francisco workers in households where San Francisco workers reside (1.63). The estimated housing demand would be 553 units ($1,640 \times 0.55 \div 1.63 = 553$).

²² Hausrath Economics Group, *Eastern Neighborhoods Rezoning: Socioeconomic Analysis*, Draft for Public Review, March 2007. Available on the internet at: http://www.sfgov.org/site/uploadedfiles/planning/Citywide/pdf/SEIA_DRAFT_for_Public_Review.pdf.

living nearby (unless, for example, they chose to live in crowded conditions with others). This diminished housing choice could have physical implications, such as longer commutes that would generate more traffic and more pollutant emissions. The proposed project would be required to comply with the Jobs-Housing Linkage Program (*Planning Code* Secs. 313 *et. seq.*), which would require that the project sponsor either fund the construction of 116 affordable housing units²³ or pay an in-lieu fee to the City in the amount of \$19.89 per gross square foot of office space, or approximately \$8.57 million, or to employ a combination of housing construction and in-lieu fee. Compliance with the Jobs-Housing Linkage Program would not fully meet the increased demand for affordable housing that would be generated by the proposed project. However, the Jobs-Housing Linkage Program would substantially reduce the affordable housing demand that the project would otherwise generate.

No housing exists on the project site, and thus the project would not displace any housing units or create the need for replacement housing.

In light of the above, the project would not result in significant effects related to population and housing.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

²³ Based on 0.00027 housing units per gross square foot of office development and a project of 430,650 square feet of gross floor area of office space, per *Planning Code* Section 313.5.

D. Cultural Resources

Introduction

CEQA Section 21084.1 states that “a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” A “historical resource” is defined as one that is listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register). Subsurface cultural (archeological) resources may also be historical resources if they are listed in, or determined eligible for listing in, the California Register. In addition, a resource that (i) is identified as significant in a local register of historical resources, such as Article 10 and Article 11 of the *San Francisco Planning Code* and certain other surveys that have been adopted by the City,²⁴ or (ii) is deemed significant due to its identification in an historical resources survey meeting the requirements of Public Resources Code Section 5024.1(g), is presumed to be historically significant “unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant.” Finally, CEQA Section 21084.1 permits a lead agency to determine that a resource constitutes a historical resource even if the resource does not meet the foregoing criteria. A “substantial adverse change” is defined in Section 15064.5(b)(1) of the State CEQA Guidelines as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.”²⁵

The Planning Department considers as historical resources those properties listed in or determined eligible for the California Register (including properties listed in or eligible for listing in the National Register of Historic Places) and resources listed in an adopted local historic register. According to Planning Department CEQA historic resources review procedures, adopted “local historic registers” include *Planning Code* Articles 10 and 11 and resources listed as National or California Register-eligible in four specific local surveys adopted by the Board of Supervisors or Planning Commission: the 1968 book *Here Today*,²⁶ adopted by Board of Supervisors resolution in 1970; the Dogpatch Survey, endorsed by Planning Commission motion in 2001; the Central Waterfront Survey, endorsed by Planning Commission motion in 2002; and the North Beach Survey, adopted by Board of Supervisors resolution in 1999. Other potential historical resources generally require further consideration prior to their status being confirmed. Planning Department historical resource review procedures state that, for various types properties, including buildings more than 50 years old that are proposed for demolition, “additional research will be required to determine whether they meet the California Register criteria and qualify as ‘historical resources’ for the purposes of CEQA.”²⁷ This further research will, in some cases, result in a property not previously identified as a historical resource being determined to be such a historical resource for CEQA purposes. As stated in Section 15064.5(a)(4) of the State CEQA Guidelines, “The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of

²⁴ These include surveys of Dogpatch, the Central Waterfront, and North Beach, and the 1968 book *Here Today* (see below).

²⁵ The definition of material impairment is presented under Significance Criteria in the impact analysis of this section.

²⁶ *Here Today, San Francisco's Architectural Heritage*. Text by Roger Olmsted and T. H. Watkins, San Francisco, CA, Chronicle Books, 1968.

²⁷ San Francisco Preservation Bulletin No. 16, San Francisco Planning Department, “CEQA Review Procedures for Historic Resources,” Draft, March 31, 2008. Available on-line at: <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=5340>; page 6.

Historical Resources, not included in a local register of historical resources..., or identified in an historical resources survey ... does not preclude a lead agency from determining that the resource may be an historical resource”

Evaluation of the potential for proposed projects to affect “historical resources” is a two-step process; the first step is to determine whether the property is an “historical resource” as defined in Section 15064.5(a)(3) of the State CEQA Guidelines, and, if it is an “historical resource,” the second step is to evaluate whether the action or project proposed by the sponsor would cause a “substantial adverse change” to the “historical resource.”²⁸

Setting

Paleontological Resources

There are no known paleontological resources at the project site. As described more fully in Section IV.N, Geology, Soils, and Seismicity, the project site is underlain to the proposed depth of excavation primarily by artificial fill, Dune Sand, and Marsh deposits. The fill and Dune Sand do not typically contain paleontological resources (fossils), and the Marsh deposits are relatively young in age and thus are unlikely to contain rare or important fossilized remains.

Archeological Resources

An archeological research design and treatment plan (ARD/TP)²⁹ has been prepared for the proposed project; its findings are summarized in this section. The ARD/TP includes an historical context; an assessment of the types of archeological resources that may be present and the significance of expected archeological resources; a testing plan; and a treatment plan for recovered archeological data. The project site is located within a quarter mile of two recorded prehistoric shell midden sites (CA-SFR-112 and CA-SFR-135). These prehistoric deposits are located at 49 Stevenson Street and 560 Mission Street, and at depths below the existing surface of 5.1 feet to 6.25 feet, respectively. These two sites probably represent a single midden site intermittently occupied from A.D. 400 to A.D. 900. Previous archeological and geotechnical borings indicate that a marsh deposit, characterized by a reddish-brown to orange-brown organic sandy clay layer (3-10½ feet thick), is located 18 feet to 28 feet below ground surface. Although there has been no indication this layer contains evidence of cultural materials (i.e., shell, fire-affected rock, bone, or culturally developed soils), its depth is consistent with buried prehistoric midden sites in the vicinity. Thus, prehistoric archeological resources could be located on the project site.

²⁸ San Francisco Preservation Bulletin No. 16, (see footnote 27, p. 52); pp. 1-2.

²⁹ William Self Associates. *Final Historical Context Statement, Archaeological Research Design, Monitoring and Treatment Plan, 222 Second Street Project, San Francisco*. September 2007. This report is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

During the Gold Rush period the project site was located within an area known as “Happy Valley,” a settlement of temporary encampments from around 1849 to 1852. Previous archeological testing and data recovery on the project site has uncovered domestic archeological deposits associated with residents from the 1850s to the early 1900s. Such artifacts include glassware, ceramics and other items excavated from the refuse deposits of post-Gold Rush redwood-lined privies.

Previous archeological testing was confined to the middle of the project site where, historically, only shallow building foundations would have existed. However, the maximum depth of excavation for the proposed two-level parking garage and mat foundation is 30 feet. Because deeper pre-1906 building foundations may be present along Tehama, Howard and Second Streets, potential archeological resources are expected to be below the level of prior soils disturbance (20 feet below the surface). These potential archeological resources would have to be exposed and documented before a final assessment of their historical significance can be made. Considerable disruptions of over a century and a half of intensive urban development within the project area, however, decrease the likelihood of potential recovery of any as yet unknown historic deposits retaining sufficient integrity necessary to be considered historically significant.

Historical Resources

The project site and the block on which it is located has experienced several eras of development, from the late-19th and early-20th century era of residential use and buildings that were destroyed by the 1906 earthquake and fire, to the more commercial and industrial decades of the 20th century.

National Register of Historic Places / California Register of Historical Resources

The National Register of Historic Places (National Register) is the official U.S. government list of properties that have architectural, historical or cultural significance at the national, state or local level. The California Register is an inventory of significant architectural, archeological, and historical resources in the State of California. Resources can be listed in the California Register through a number of methods. State Historical Landmarks and National Register-eligible properties are automatically listed in the California Register.

In order to be eligible for the California Register, a resource (building, site, object, structure, or district) must meet at least one of four criteria, and must also retain sufficient integrity. The four criteria are: (A) association with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; (B) association with the lives of persons important to local, California, or national history; (C) the embodiment of the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or (D) the resource has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation. Integrity encompasses seven aspects: location, design, setting, materials, workmanship, feeling, and association (with an important historic person and/or event).

Properties listed or under review by the State of California Office of Historic Preservation (OHP) are assigned a California Historical Resource Status Code of “1” to “7” in order to establish their historical significance in relation to the National Register or California Register. (That a property does not have a status code does not necessarily indicate the property is ineligible for listing; more often, this simply reflects the fact that a property has not been assessed for eligibility for the National Register or California Register.) Properties with a listing of “1” or “2” are eligible for listing in either California Register or the National Register, or are listed in one or both of the two lists. Properties with a “3” or “4” appear to be eligible for listing in either register, but normally require more research to support this rating. Properties with a “5” are typically locally significant or are of contextual importance. Designation of “6” means that the property is not eligible for listing (frequently only as to the National Register; some such properties may be eligible for the California Register), while a designation of “7” means that a property either has not been evaluated or requires re-evaluation.³⁰ Properties rated 1 – 5 are considered to be historical resources for the purposes of CEQA.

Properties are assigned California Register status codes when they are evaluated. These evaluations may occur for various purposes. For example, buildings may be assigned tentative status codes as part of a “Section 106 review” (pursuant to the National Historic Preservation Act), or as part of another type of project-specific historical resources evaluation; once these ratings are accepted by OHP, they are recorded as such in OHP’s database, which is disseminated to various state offices of the California Historical Resources Information System (CHRIS).

Project Site³¹

The existing parking lot that occupies the project site contains no existing structures other than a small parking lot attendant shed. The site is not listed as an individual resource under Article 11 of the *Planning Code*, and is not located in any historic districts, but is immediately adjacent to a Conservation District identified in the *Planning Code* and is across the street from a historic district listed in the National Register. These districts are discussed below, under “Historical Resources in the Project Vicinity.”

The building at 631 Howard Street—where the project proposes to demolish a loading dock at the southeast corner of the building—is identified as a “Significant Building – Category II” under Article 11 of the *Planning Code*, which addresses preservation of buildings and districts of architectural, historical, and aesthetic importance in the C-3 (Downtown) zoning district. Article 11, adopted in 1985 as part of the implementation of the Downtown Plan, divides all buildings in the C-3 Zoning Districts (generally, downtown) into five categories according to the Building Rating Methodology as set forth and explained

³⁰ The State Office of Historic Preservation (OHP) adopted new California Historical Resource Status Codes in 2003. Previously, a designation of “4” indicated that a property had the potential, if some circumstance or event was to happen in the future, to become eligible for the National Register. Thus by definition, resources identified as “4”s were not eligible for the National Register. Yet under CEQA, they were presumed to be historical resources. OHP plans to convert all former “4”s to either a 7N or 7N1, whichever is appropriate, to signify that these resources need to be reevaluated using current standards and applying both National Register and California Register criteria.

³¹ This discussion relies in part on a background report, “Historical Resources Evaluation Report: 631 Howard Street,” prepared by Frederick Knapp, AIA, and Melissa Bléier, February 2008. This report is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

in the “Preservation of the Past” section of the Downtown Plan (*Planning Code* Sec. 1102). The most important buildings are designated “Significant³² Buildings” and are rated Category I and Category II. A second tier of structures are designated “Contributory Buildings” and are rated Category III and Category IV. On the basis of evaluations undertaken in connection with the preparation and adoption of the Downtown Plan and Article 11, more than 400 buildings were classified as Significant or Contributory (Categories I, II, III, and IV). All other downtown buildings are “Unrated Buildings” (neither individually nor contextually significant) and designated Category V. On the basis of these same evaluations, Article 11 also designates six areas as Conservation Districts, which contain “substantial concentrations of buildings that together create subareas of special architectural and aesthetic importance. Such areas shall contain substantial concentrations of Significant and Contributory Buildings and possess substantial overall architectural, aesthetic or historic qualities justifying additional controls in order to protect and promote those qualities” (*Planning Code* Sec. 1103). One of these Conservation Districts is immediately adjacent to the project site, as discussed below.

As a Significant Building in Article 11, the building at 631 Howard Street “is identified as significant in a local register of historical resources” and is therefore “presumed to be historically significant” absent evidence to the contrary. Because no such evidence has been uncovered, the 631 Howard Street building is deemed a historical resource under CEQA. In addition, the building was determined individually eligible for the National Register of Historic Places in 1977 (and thus is also individually listed in the California Register), further ensuring that it meets the CEQA qualification as a historical resource.

The 631 Howard Street building is a reinforced concrete structure faced in light-brown brick, originally constructed in 1929 and designed by noted San Francisco architect George Kelham. Kelham originally arrived in San Francisco when he was sent by the New York firm of Trowbridge and Livingston to serve as supervising architect for the Palace Hotel (City Landmark No. 18) in 1909. He subsequently opened his own practice and was architect for the old San Francisco Main Library (now the Asian Art Museum), the Shell and Standard Oil Buildings on Bush Street, the Russ Building on Montgomery Street, and the Hills Brothers Building at the foot of Harrison Street (Landmark No. 157), as well as the Mount Davidson cross. Kelham is also known as the chief architect for the Panama-Pacific Exposition (World’s Fair) held in San Francisco in 1915, and as Supervising Architect of the University of California at Berkeley, from 1927 until his death in 1936.

The building at 631 Howard Street was built for William Volker & Co, a Kansas City-based distributor of furniture and window shades, and was historically known as the William Volker Building. (The company first opened a San Francisco branch in 1906.) The approximately 50-foot-tall structure has four stories plus a mezzanine (and basement), with Art Deco design features on its principal Howard Street façade. As it stands today, the Howard Street facade comprises a series of nine brick pilasters interspersed with smaller pilasters that extend from the top of the ground-floor storefront to the roof, where the building

³² This use of the word significant in the context of historic architectural resources is to be differentiated from its use in the sense under CEQA that denotes an effect that constitutes a substantial adverse change in the environment. Significant, when used in reference to historic architectural resources, denotes a resource’s importance, in that context.

terminates in a crenellated parapet. The pilasters separate the façade into eight bays, each of which contains metal multi-light “industrial sash” windows with steeply sloping sills, below which are a row of dentils and spandrel panels decorated with diamond-shaped stone inserts that together emphasize the building’s geometric design that is typical of the Art Deco style. As is frequently the case with commercial buildings, the ground floor storefront has undergone a series of alterations since the building’s construction (see Figure 15).

In contrast to the Howard Street façade, the south, or rear (Tehama Street), and east facades are unadorned concrete, painted light brown, with steel industrial sash windows at the upper three stories. At the southeast corner of the building, on the eastern end of the Tehama Street façade, there is a single-story concrete-enclosed loading dock that was apparently added to the building some 20 years after initial construction. The loading dock, which occupies a portion of the 631 Howard site that is 20 feet wide along Tehama Street and extends 82.5 feet north from Tehama Street, is a simple utilitarian addition to the 631 Howard building, with a metal roll-up door spanning virtually the entire width along Tehama. The east wall is unadorned concrete, while the north façade contains a metal industrial sash that is two lights tall by 10 lights wide (see Figure 15).

Based on the building’s appearance and on archival information, 631 Howard Street was apparently constructed in stages, with a number of years separating the phases of construction. This is evidenced by the fact that aerial photography reveals what appears to be an original parapet wall present between the third and fourth bays of the Howard Street façade. At the same location, it seems clear that the current fourth pilaster from the left was originally the eastern termination of the building: this pilaster is wider than the other internal pilasters, with an additional step back from the street at its farthest eastern extent, the same as the current first pilaster, which now forms the eastern building wall. Additionally, because the ground floor currently unoccupied, it is possible to see that the columns in line with the fourth pilaster are larger than the other interior columns, indicating they may have originally been part of an exterior wall. Also, at the rear Tehama Street façade, there is a division in the concrete wall at the same location, and the fenestration is different in the three easternmost bays than in the remainder of the rear wall. Moreover, the lot on which the building sits today is 120 feet wide along Howard Street (and 165 feet deep) and has its easternmost point 155 feet west of Second Street, whereas the 1929 original building permit was for a building on a lot 75 feet wide and 165 feet deep, located 200 feet west of Second Street. The western portion of the building terminates New Montgomery Street, while the eastern portion is east of New Montgomery. The original building permit identifies the building as being “opp[osite] New Montgomery St.” Finally, the 1913 Sanborn map, updated to 1949, identifies the eastern portion of the building as “built 1938,” whereas the western portion says “built 1929.” This same map identifies the loading dock as “built 1949.”

Although research to date at the Department of Building Inspection has not revealed a building permit for either the 1938 horizontal addition or the 1949 addition of the loading dock, the above evidence suggests that the original building consisted of five bays along Howard Street, with another three bays added to the eastern side of the building in 1938, and the concrete loading dock added some 11 years later. The



Front (Howard Street) Facade



Rear (Tehama Street) Façade

SOURCES: Kelley & Ver Planck (t); ESA (b)

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Figure 15
Photographs of 631 Howard Street Building

Historic Resources Inventory sheet completed in 1977 at the time the building was nominated for the National Register identified the architect for a 1930s addition as W.D. Peugh, who also later designed some interior alterations to the building. Wilbur D. Peugh designed, along with the O'Brien Brothers, the six-story Moderne-style office building at 130 Montgomery Street in 1930; 25 years later, Peugh designed the adjacent high-rise office building at 120 Montgomery Street, using zigzag-patterned pressed metal panels in an attempt to relate the building to the earlier, smaller structure next door.³³

When it was built in 1949, the loading dock would not have been visible from either Howard or Second Streets, as there were one- and two-story buildings on both the Howard and Tehama Street frontages of the western portion of the 222 Second Street site, which surrounded the loading dock on the north, northeast, and east. Two buildings on Howard Street, including one that extended to Tehama Street, remained until approximately 1990, when they were demolished in connection with a previously approved office project at 222 Second Street.³⁴ Nevertheless, the loading dock at 631 Howard Street would not have featured prominently as an integral element of the 631 Howard Street building.

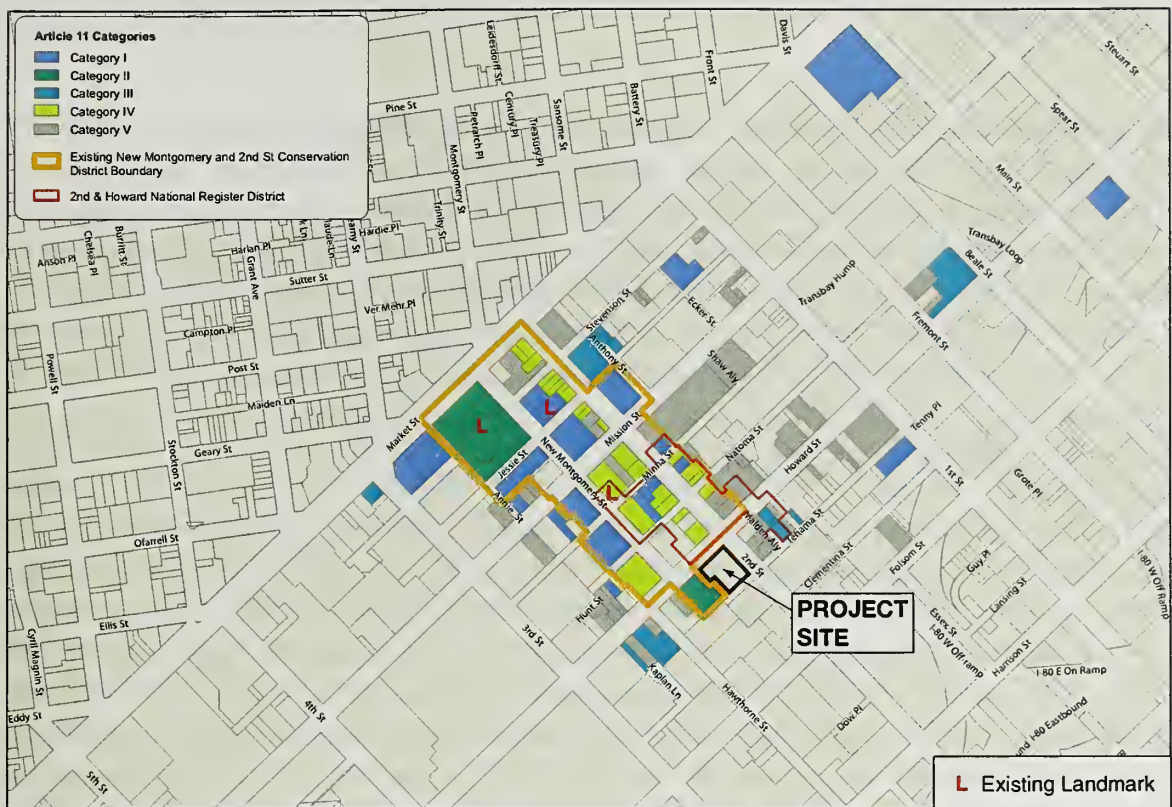
Historical Resources in the Project Vicinity

The existing project site is adjacent to the New Montgomery–Second Street Conservation District, a historic district listed in Article 11 of the *Planning Code* (Article 11, Appendix F).³⁵ This district extends southward from Market Street, generally encompassing both sides of Second and New Montgomery Streets, as far as Howard Street; the district boundary crosses Howard Street immediately west of the project site to include the building at 631 Howard Street (see Figure 16). According to Appendix F of Article 11, the New Montgomery–Second Street Conservation District represented one of the earliest attempts to extend the City's financial district south of Market Street. New Montgomery Street was planned as a southward extension of the City's principal financial avenue in the pre-1906 era, Montgomery Street, but was built only to Howard Street because of opposition from landowners south of Howard Street. Most of the existing office-over-retail buildings were erected in the decade after the 1906 earthquake and fire, although the most notable office building, the Pacific Telephone and Telegraph Building at 140 New Montgomery (approved for conversion to residential use), was completed in 1925. On Second Street, by contrast, wholesaling uses predominated before the earthquake, as the extension of Second Street south of Howard Street did not occur until 1869 due to the cost of digging the "Second Street Cut" through Rincon Hill. The existing buildings were mostly constructed by 1914, and by the

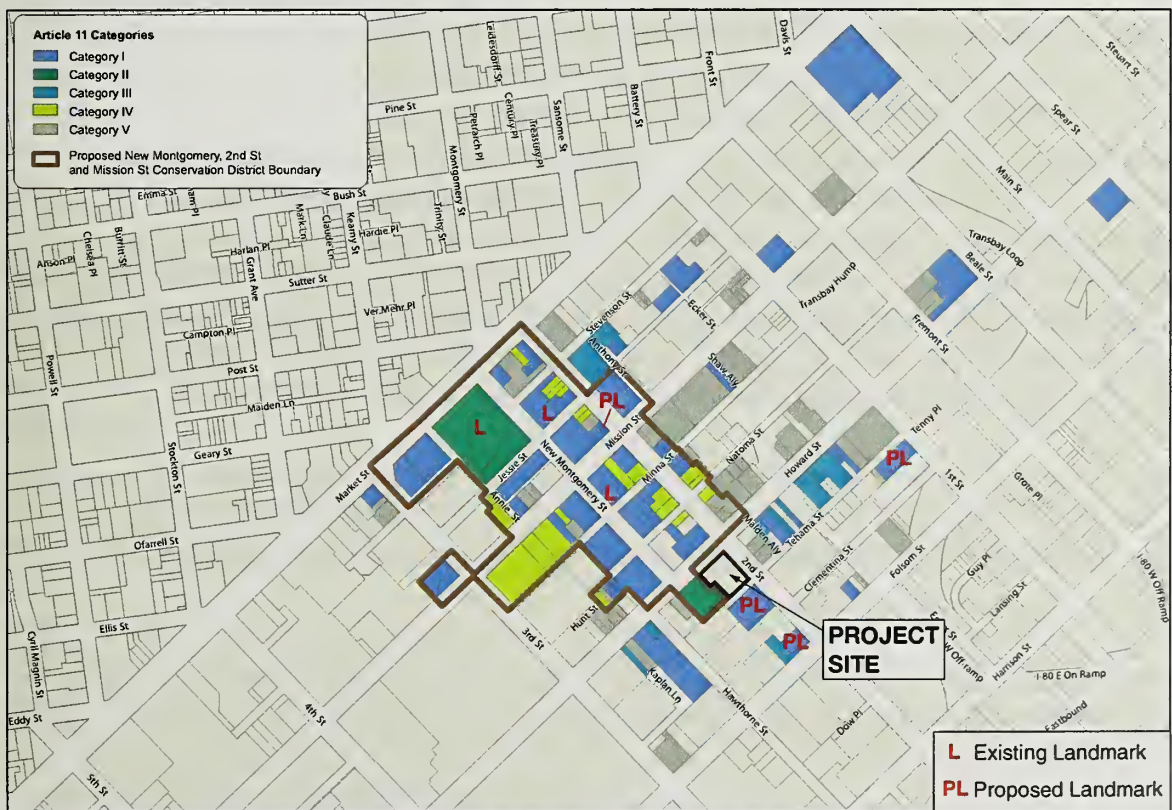
³³ Charles Hall Page & Associates, for the Foundation for San Francisco's Architectural Heritage, *Splendid Survivors*, 1979; San Francisco: California Living Books; pp. 203 – 204.

³⁴ A geotechnical report for the previous project identifies these buildings as extant in 1990. The easterly of the two buildings extended from Howard Street to Tehama Street and would have abutted the loading dock on the east. (Harding Lawson Associates, *Geotechnical Investigation, Proposed Office Building, 222 Second Street, San Francisco, California*, August 22, 1990.)

³⁵ Conservation districts, found only in the C-3 (downtown) zoning districts, "contain substantial concentrations of buildings that together create subareas of special architectural and aesthetic importance." They must contain substantial concentrations of "Significant" and "Contributory" buildings, as designated under Article 11 and "possess substantial overall architectural, aesthetic or historic qualities justifying additional controls in order to protect and promote those qualities" (Article 11, Section 1103). "Significant" and "Contributory" buildings under Article 11 are buildings at least 40 years old that were found to meet certain standards for architectural design and relationship to their environment and to have either individual or contextual importance as historical resources.



Existing Article 11 Designations and Historic Districts



Proposed Article 11 Designations and Historic Districts
under draft Transit Center District Plan



1920s, Second Street was dominated by office support uses such as printers and binderies, and by uses in support of the construction industry, with many buildings containing ground-floor retail stores. Buildings on New Montgomery Street are typically five to eight stories, while those on Second Street are generally smaller (three to five stories) and less architecturally noteworthy. Architectural styles range widely, but facades are commonly of brick, stone, or terra cotta. Some of the newer large buildings in the district, including the office tower at 101 Second Street and the residential building at 199 New Montgomery Street, also have masonry facades, although assembled of precast panels rather than individual bricks. The New Montgomery–Second Street Conservation District, by virtue of being listed in Article 11 of the *Planning Code*, is a historical resource under CEQA.

Exterior architectural features of the New Montgomery–Second Street Conservation District include building massing that occupies the entire lot. Many structures on New Montgomery Street, built on large lots, have a horizontal width that exceeds their height (the Pacific Telephone Building being the primary exception), while buildings on Second Street tend to be more vertical in orientation, and narrower. Masonry cladding on multi-dimensional wall surfaces expresses the mass and weight of the structure, simulating load-bearing walls, although many structures have steel frames. Almost all buildings have a two or three-part compositional arrangement, with a base and shaft, and a capital for three-part buildings. Horizontal composition frequently includes a series of bays and a rhythmic pattern of windows. The scale of development varies: as noted, buildings on New Montgomery are generally larger. Masonry predominates as exterior cladding. Terra cotta is also used, frequently glazed to resemble granite or other stones. On Second Street, many buildings are faced in stucco. Rustication at the lower levels expresses mass and weight. The color palettes tend towards light or medium earth tones. Detailing and ornamentation ranges from utilitarian, in the case of industrial brick and stucco office/warehouses, to ornately decorated office buildings. The details on the latter buildings are generally of Classical/Renaissance derivation and include projecting cornices and belt courses, rustication, columns and colonnades, and arches. According to the *Planning Code*, the District, despite being located near the financial district and adjacent to a downtown growth area, the Conservation District is nevertheless “one of the few architecturally significant areas remaining largely intact in the South of Market area” (Article 11, Appendix F, Section 5(d)).

Among the buildings in this conservation district are five that are also individually listed in the California Register by virtue of having been found individually eligible for the National Register. In addition to 631 Howard Street, these buildings include 20 Second Street, 609 Market Street, 170-180 New Montgomery Street, and 617 Mission Street.

In addition to the New Montgomery–Second Street Conservation District, the project site is adjacent to, across Howard Street from, the Second and Howard Streets National Register District, a historic district listed in the National Register of Historic Places in 1999. The Second and Howard Streets National Register District is generally contained within the City’s much larger New Montgomery–Second Street Conservation District, except that the National Register district extends eastward the distance of a few lots’ width along both sides of Howard Street to the east of the local district. (see Figure 16, p. 60). The Second and Howard Streets National Register District and the New Montgomery–Second Street District share some degree of architectural character (particularly with regard to the buildings on Second Street in

the local district, which, as noted above, are generally smaller in scale than those on New Montgomery) and have a common history in that almost all their buildings were constructed as part of the rapid rebuilding of downtown San Francisco in the aftermath of the 1906 earthquake and fire. However, the buildings in the Second and Howard Streets National Register District are generally smaller than those in the local district, inasmuch as the buildings in the National Register district were typically constructed for what would today be identified as “production, distribution, and repair” (PDR)—that is, light industrial—uses, whereas New Montgomery Street housed more office uses.

The Second and Howard Streets National Register District contains 22 buildings, of which 19 were identified as contributors³⁶ at the time the district was nominated. (The three non-contributors include two heavily altered buildings and a vacant lot.) The contributory buildings are three to seven stories in height, and all were built between 1906 and 1912, which corresponds to the district’s “period of significance.”³⁷ According to the nomination form for this district, by 1910, the district was home to a plumbing supply house, nine electrical businesses, a terra cotta works, several engineers, metallurgists, a blueprint service, an asbestos supplier, and a sheet metal works, along with chemists, and printers. As a result, “The scale and modesty of the buildings demonstrates their intended uses as different from the city’s main office sector to the north crossing Mission and Market Streets and to the west along New Montgomery Street. They are also different from the industrial sector to the east and south.”³⁸ The Second and Howard Streets District was listed in the National Register under Criterion C, Architecture, in the context of San Francisco’s rebuilding after the great earthquake and fire of 1906. According to the nomination, “The district has a remarkable continuity of building type, scale, and style. ... All are masonry structures, half of them clad in brick, two in terra cotta (now painted), and the rest in stucco. All are Commercial Style with limited Renaissance-Baroque ornament. Ground floors are commercial and therefore, by design and practice, frequently altered to suit commercial needs. Upper floors most often are lofts.”³⁹

Neither the 222 Second Street project site nor the 631 Howard Street building is included within the Second and Howard Streets National Register District. Although 631 Howard was built later than the buildings in the Second and Howard Streets National Register District, the historic resources evaluation states that “the building easily fits into the architectural character which defines the Second and Howard historic district.”

As part of its background analysis for the proposed Transit Center District Plan area, the Planning Department has commissioned a historic context statement and additional analysis of several dozen

³⁶ According to the National Park Service, a contributing resource (building, in this case) is one that adds to the historic associations or historic architectural qualities for which a historic district is found to be important, either because it was present during the period of significance, relates to the documented significance of the property, and possesses historic integrity or is capable of yielding important information about the period; or because it is independently eligible for the National Register. A non-contributor does not meet either of these two criteria, or has lost too much integrity to convey its significance due to alteration. (National Park Service, National Register Bulletin 16A, “How to Complete the National Register Nomination Form,” 1997. Available on the internet at: <http://www.nps.gov/history/nr/publications/bulletins/nrb16a/>. Viewed February 6, 2009.

³⁷ A district’s period of significance is the time when the district was associated with important persons or events and/or attained the characteristics that qualify it for listing as a historical resource.

³⁸ National Register of Historic Places Registration Form, Second and Howard Streets District, San Francisco, CA, 1998. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

³⁹ *Ibid.*

individual buildings within the proposed Plan area, which includes the project site and vicinity.⁴⁰ As a result of this analysis, the Department is proposing to expand the existing New Montgomery–Second Street Conservation District, to recommend additional individual resources for Landmark designation under *Planning Code* Article 10, and to revise the Article 11 historic ratings of several individual resources; these proposals are set forth in the Draft Transit Center District Plan, published by the Planning Department in November 2009. The proposed expansion of the conservation district would encompass areas along both sides of Mission Street between New Montgomery and Third Streets (except the northeast corner of Third and Mission Streets), and would cross Third Street to include the Aronson Building on the northwest corner of Third and Mission Streets. The expansion would also extend westward on Natoma Street to Hunt Street. The Department proposes to rename the expanded district the “New Montgomery–Mission–Second Street Conservation District.” No changes in the district boundary are proposed in the immediate vicinity of the project site; the only proposed change proximate to the site is the planned initiation of Landmark designation for the building across Tehama Street from the project site, as discussed below. (see Figure 16).

In addition to the three districts, the project site is also adjacent, across Tehama Street, to the Marine Firemen, Oilers and Watertenders and Wipers Association (“Marine Fireman’s Union”) hall at 240 Second Street. While not currently listed as a historical resource and not included in either of the districts discussed above, this structure, built in 1956, is part of a group of related maritime union buildings on Rincon Hill that are likely eligible for the California Register based on their association with maritime union history in San Francisco and on Rincon Hill, according to research completed for the 340-350 Fremont Street EIR (Case No. 2004.0552E; Final EIR certified June 15, 2006). This group would also include at least structures at 340 Fremont Street (Marine Engineers’ Beneficial Association hall) and 350 Fremont Street (Seafarers’ International Union/Marine Cooks and Stewards Union hall), and the Sailors’ Union of the Pacific at First and Harrison Streets.⁴¹ In addition, the Planning Department has proposed, in the draft Transit Center District Plan (November 2009), that this building be designated a City Landmark.⁴² Therefore, the Marine Firemen’s Union hall is considered a historical resource under CEQA.

As indicated in Figure 16, the draft Transit Center District Plan also proposes designating additional buildings on Howard Street as historical resources under *Planning Code* Article 11 and upgrading the Article 11 designations of others. Included among the proposed revisions are the two buildings immediately across Howard Street from the project site, both of which would be designated Category I buildings (“Significant”) under Article 11: the building at 612 Howard Street (currently Category V, Unrated), and the building at 182 Second Street (currently Category IV, “Contributory”). Each of these buildings is within the existing New Montgomery–Second Street Conservation District. All other newly

⁴⁰ Kelley & VerPlanck Historical Resources Consulting, *Transit Center District Survey, San Francisco, California*. Final Report, September 11, 2008. Prepared for the San Francisco Planning Department. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

⁴¹ The buildings at both 340 and 350 Fremont Street were approved for demolition in 2006 as part of the 340-350 Fremont Street project. As of January 2010, both buildings remain extant.

⁴² Designation as a Landmark requires preparation of a building-specific case report to the Historic Preservation Commission (HPC) and approval by the Board of Supervisors upon the recommendation of the HPC.

designated resources would be separated from the project site by Second or Hawthorne Street plus one or more parcels.

Impacts

Significance Criteria

A project would have a significant effect on the environment in terms of Cultural Resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5, including those resources listed in Article 10 or Article 11 of the *San Francisco Planning Code*;
- Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

A “substantial adverse change” is defined by State CEQA Guidelines Section 15064.5 as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.” The significance of an historical resource is “materially impaired,” according to Guidelines Section 15064(b)(2), when a project “demolishes or materially alters, in an adverse manner, those physical characteristics” of the resource that:

- (A) “convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or”
- (B) “account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or”
- (C) “convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.”

In general, a project that would comply with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties* (including the Standards for Rehabilitation) is considered mitigated to a less-than-significant level (CEQA Guidelines Section 15064.5(b)(3)).

State CEQA Guidelines Section 15126.4(b)(2) states that, “In some circumstances, documentation of a historical resource, by way of historic narrative, photographs, or architectural drawings as mitigation for the effects of demolition of the resources will not mitigate the effects to a point where clearly no significant effect on the environment would occur.”⁴³ In such cases, the demolition or substantial

⁴³ Case law has held that, at least in the instance of a major historical resource, commemoration of the resource cannot mitigate, to a less-than-significant level, the impact of demolition of the resource. (“A large historical structure, once

alteration of a historical resource would remain a significant and unavoidable impact on the environment even after the historical documentation has been completed.

Impact Analysis

Paleontological Resources

Because there are no known paleontological resources at the project site, and because the site soils are unlikely to contain rare or important fossil resources, the project would not result in an adverse effect on paleontological resources.

Archeological Resources

Impact CP-1: The proposed project could result in damage to or destruction of as-yet unknown archaeological remains, should such remains exist beneath the project site. (Significant but Mitigable)

Despite the historic disruption of the project site over 150 years of development, the potential remains that as-yet unknown historic deposits retaining sufficient integrity necessary to be considered historically significant may be present beneath the project site. Therefore, the project would have the potential to adversely affect CEQA-significant archeological resources.

Mitigation Measure M-CP-1 (see p. 70) would require site preparation and building construction to be conducted in accordance with the requirements of the project archeological research design and treatment plan.

Implementation of this measure would reduce potential effects on archeological resources, including human remains, to a less-than-significant level, both individually and cumulatively.

Historical Resources

Because there are no buildings on the existing project site other than the small parking lot shed, the proposed project would have no direct impacts on historical resources on that portion of the project site.

Impact CP-2: The proposed project would result in demolition of the loading dock of the 631 Howard Street building, a historical resource, but would not adversely affect this structure. (Less than Significant)

As part of the project, the sponsor proposes to acquire and incorporate into the project site a 1,650-square-foot (20-foot-by-82.5-foot) portion of the adjacent property to the west (Block 3735, Lot 5). On this acquired property, the proposed project would entail demolition of the single-story concrete loading dock that was added to the adjacent 631 Howard Street building in 1949, and thus would affect both the 631 Howard Street building, a contributor to the New Montgomery–Second Street Conservation District,

demolished, normally cannot be adequately replaced by reports and commemorative markers.” *League for Protection of Oakland’s Architectural and Historic Resources v. City of Oakland*, 52 Cal. App. 4th 896. 1997.)

as well as the district itself. Nevertheless, the Historic Resources Evaluation Report prepared for the project determined that because “[t]he loading dock was not part of the original building, was not historically visible from Howard Street (the primary setting of the building), was not designed by George Kelham, and differs from the main building in massing, certain materials, and detail[. r]emoval of the addition would not impair the historical integrity of the main building” at 631 Howard Street.⁴⁴ Planning Department preservation staff has concurred in this finding:

While greater than fifty years in age, the loading dock proposed for removal is a utilitarian alteration to the historic building that was borne out of the previous function of the building. It is not an alteration that has gained significance in its own right. It does not possess any of the character-defining features that are associated with the building or the district. The removal of the loading dock at the rear of the subject building would not result in a substantial adverse change to the 625 Howard Street or the district.⁴⁵

Therefore, removal of the loading dock at the rear of 631 Howard Street as part of the proposed project would not result in a substantial adverse change to the 631 Howard Street building, and this would be a less-than-significant impact.

Impact CP-3: The proposed project would be taller and more massive than the adjacent building at 631 Howard Street, a historical resource, but would not cause a substantial adverse change in the significance of this resource. (Less than Significant)

The proposed building at 222 Second Street would be substantially taller and more massive than the adjacent five-story 631 Howard Street structure (the William Volker Building). Evaluation of the effects of the proposed project on the two districts and their contributing resources determined that the proposed 222 Second Street building would adversely affect, to some degree, the adjacent 631 Howard Street building because construction of a 370-foot tall (including mechanical screen) building immediately adjacent to the five-story 631 Howard Street building—individually listed in the California Register and also a contributor to the New Montgomery–Second Street Conservation District—“would impair the integrity of setting and feeling for 631 Howard Street.” However, the project would not affect the integrity of 631 Howard Street with respect to location, design, materials, workmanship, and association. Moreover, construction of the 222 Second Street Building would not directly affect the relationship of 631 Howard Street to the New Montgomery–Second Street Conservation District, because the 631 Howard Street building, while across Howard Street from most of the district, sits directly in the path of New Montgomery Street, serving as a visual backdrop to this two-block-long street. Even with the 370-foot-tall 222 Second Street building adjacent to it, 631 Howard Street would retain its position at the “foot” of New Montgomery Street and would continue to visually terminate the New Montgomery–Second Street Conservation District. Additionally, the view down New Montgomery Street to the 631 Howard Street building is narrowly framed by existing buildings, including the 16-story residential structure at 199 New Montgomery Street, which would prevent an observer from seeing any direct contrast between 631 Howard Street and the 222 Second Street project.

⁴⁴ Knapp and Bleier, Historic Resources Evaluation Report (see footnote 31, p. 55); p. 1.

⁴⁵ Tim Frye, Planning Department Preservation Technical Specialist, Historic Resource Evaluation Response, 222 2nd Street, December 18, 2009 (see Appendix B).

An observer on Howard Street would clearly see the contrast between the height and mass of the two structures (see, for example, the photomontage from Viewpoint 3 in Figure 11, p. 41). However, as is evident in this figure, the lowest, or base, element of the proposed 222 Second Street building would be visually set apart from the remainder of the tower by the 20-foot setback beginning at level 5 of the new building (and the additional 5-foot reveal (recess) at level 5 of the project), helping to establish continuity with the adjacent historic structure at 631 Howard Street by responding to this building's cornice line height. Moreover, the proposed project's ground-floor façade treatment of large glass panels set off by wide columns and a belt course would further differentiate the building base from the tower above. As indicated by Planning Department preservation staff:

The Department believes that an impact has been avoided through design gestures in the proposed office building that give the project greater weight in acknowledging the surrounding context, in particular, the William Volker Building [at 631 Howard Street] adjacent to the project site. The proposed building will provide a base that is consistent with the height and massing of the Volker Building and within the height range of adjacent historic resources associated with the two districts. The cladding system along the base will be differentiated and perceptible to the public in order to establish itself as part of the street wall and relate its massing back to the surrounding context. The tower portion of the proposed building will be set back on the Howard Street elevation and along the west property line that it shares with the Volker building to further strengthen the base and provide visual relief to the adjacent historic resource.⁴⁶

Therefore, given the design treatment of the proposed project's base, including the ground floor, and given that the historic resources assessment found that the 631 Howard Street building would retain five of seven aspects of integrity (location, design, materials, workmanship, and association), this analysis finds that the indirect effects of the proposed project with respect to its adjacency to the building at 631 Howard Street would not "demolish[] or materially alter[], in an adverse manner, those physical characteristics [of the 631 Howard Street building that] convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or ... account for its inclusion in a local register of historical resources" (i.e., Article 11 of the *Planning Code*). As such, the proposed project would result in a less-than-significant effect on the William Volker Building at 631 Howard Street, and no mitigation is required.

Impact CP-4: The proposed project would not substantially alter the spatial relationships among buildings within the two historic districts and other historic resources in the vicinity such that the significance of the districts or other resources would be materially impaired. (Less than Significant)

Because the project site is outside the New Montgomery–Second Street Conservation District, none of that district's directives concerning new construction and renovation are applicable to the proposed project, and there are no controls governing projects near conservation districts. Moreover, the project would not remove or alter any historic fabric that contributes to the significance of either district. Finally, the setting of a historic district is generally understood to be defined by the boundaries of the district itself:

⁴⁶ Tim Frye, Planning Department Preservation Technical Specialist, December 18, 2009 (see footnote 45, p. 66).

Inherent in the concept of a district is that its boundaries encompass the physical realm that makes it significant, and it has within those boundaries a critical mass sufficient to meet the standards for designation. Changes outside a district generally do not diminish the significance of a district; the two districts in question are a good example of this. While each one contains historic buildings which have some consistency and interrelationship, outside the boundaries are a variety of other buildings and conditions not compatible with the character of the district. Changes outside the boundaries, such as construction of the building proposed for 222 Second Street, would not affect the district itself – and the areas surrounding the two districts in question do not play a role in the significance or eligibility of the districts.⁴⁷

In terms of effects on the overall integrity of the two existing historic districts, the 222 Second Street building would be substantially taller and more massive than the buildings in the Second and Howard Streets National Register District, and than the buildings in the New Montgomery-Second Street Conservation District with the exception of the historic 26-story Pacific Telephone Building at 140 New Montgomery Street.

With a façade of glass accented by metal, the proposed project would employ different exterior materials than the masonry common to the districts. The project also would not be composed in the traditional early-20th-century two-or-three-part vertical composition. However, the proposed project would not be within either of the historic districts, and would not adversely affect the adjacent William Volker Building at 631 Howard Street—the nearest contributing resource within the New Montgomery-Second Street Conservation District, as described in the preceding impact.

The proposed project would be constructed on what is now a parking lot, adjacent to but outside the New Montgomery-Second Street Conservation District (and separated from the Second and Howard Street National Register District by both Second and Howard Streets). As noted above, 631 Howard Street would continue to visually terminate the New Montgomery-Second Street Conservation District, and existing buildings would preclude views showing any direct contrast between 631 Howard Street and the 222 Second Street project. Moreover, while the project would alter the streetscape on both Second and Howard Streets, it would obstruct the view of only a secondary elevation of the adjacent building at 631 Howard Street, a district contributor, and thus would not substantially alter the visual continuity of resources within the conservation district. Therefore, the proposed project would have a less-than-significant impact on the New Montgomery-Second Street Conservation District, both as currently defined and as proposed for expansion (because, as noted in the Setting, the expansion would not occur in proximity to the project site).

Planning Department preservation staff has concurred in this finding. As noted above, staff determined that the project's height would be comparable with the range of building heights of adjacent structures in the two districts. Staff also found that:

While the buildings within the adjacent districts exhibit more uniform building heights, the subject site is not within the boundaries of any of these identified districts. The overall height of the

⁴⁷ Knapp Architects, Historical Evaluation of 222 Second Street Project on New Montgomery-Second Street Conservation District and Second and Howard Streets National Register District. August 2008. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

building is consistent with the area because the buildings outside of the identified districts contain a variety of historic and contemporary buildings that vary widely in height and massing.⁴⁸

Because any physical connection between the proposed project and the smaller Second and Howard Street National Register District is even more clearly attenuated by the width of Second and Howard Streets, the proposed project would also have a less-than-significant impact on this district.

In light of the above, while the proposed project would serve to more tightly frame the two districts by adding a more massive element at or near a district edge, it would not alter the relationship of the buildings within the districts to each other. Moreover, in the case of the New Montgomery–Second Street district, the project would not alter the fact that the district “is a microcosm of twentieth century commercial architecture, ranging from low-level speculative office blocks to the City’s premier hotels and executive offices of the time” (*Planning Code* Article 11, Appendix F, Section 5(g)). As the *Code* continues, “The area retains a comfortable human scale, which will become increasingly important as neighboring areas of the South of Market become more densely developed.” The *Planning Code* therefore acknowledges the trend toward the development of larger structures immediately outside the boundaries of the conservation district. The proposed project would not substantially alter this unique and important defining characteristic of the New Montgomery–Second Street Conservation District, and thus the project’s effects on this district and its integrity, as well as on the Second and Howard Streets National Register District, would be less than significant.

Other than 631 Howard Street, the project site is physically separated from the other buildings in the vicinity that are individually listed in the California Register, and therefore would not adversely affect those buildings.

With regard to the Marine Firemen’s Union hall, proposed in the draft Transit Center District Plan for designation as a City Landmark, the project site is separated from this building by Tehama Street. Although the project would result in construction of a building much taller than the Marine Firemen’s Union hall, this change would not adversely affect the characteristics of the union hall that make it potentially eligible for Landmark designation and listing in the California Register, because these features are connected to that building’s association with events (maritime union history in San Francisco) and not with the specific design or architectural context of the Marine Firemen’s Union hall structure. While the Marine Fireman’s Union building may be threatened as a result of the already approved demolition of other nearby maritime union halls, and by the shift away from San Francisco of most Bay Area shipping activity, the proposed project at 222 Second Street would neither adversely affect the Marine Firemen’s Union building nor contribute considerably to any cumulative effects on the union hall or other maritime union halls in the vicinity.

As the proposed project would not result in demolition of any structures other than the 631 Howard Street loading dock, determined above not to be historical, and would not result in adverse effects on the two nearby historic districts, the project would not contribute to any other potential cumulative effects on historical resources.

⁴⁸ Tim Frye, Planning Department Preservation Technical Specialist, December 18, 2009 (see footnote 45, p. 66).

It is noted that the project site is within the C-3-O(SD) use district. As stated in the Project Description, the Special Development (SD) designation (*Planning Code* Sec. 248) expressly permits development at densities above the base floor area ratio if there is a commensurate reduction in the allowable density of development on other sites in the downtown by the transfer of development rights (TDR) from eligible sites. As described in *Planning Code* Section 128, the sites from which development rights can be transferred are those on which historical buildings (generally, Significant or Contributory Buildings under Article 11 or City Landmarks) are located. Thus, by purchasing transferrable development rights from one or more eligible sites, the proposed project would contribute towards the Downtown Plan's policy goal of preservation of historical resources.

Cumulative Impacts

The planned Caltrain Downtown Extension project would result in demolition of several buildings on Second and Howard Streets. In particular, the Caltrain extension would demolish buildings at 171 and 191 Second Street (between Natoma and Howard Streets); 205 – 215 and 217 Second Street (between Howard and Tehama Streets); and 580 Howard Street. The buildings at 171 and 191 Second Street and 580 Howard Street are contributors to the Second and Howard Street National Register District. The demolition of these contributors would visually and materially sever the southeastern portion of the National Register district (along Howard Street between First and Second Streets) from the remainder of the district. This would constitute a loss of integrity of this historic district. However, construction of the project at 222 Second Street would not materially add to this visual and physical separation because it would be separated from the demolition of the contributing resources by the width of both Second and Howard Streets, and thus the project would not make a considerable contribution to the impact. Therefore, the project's cumulative effect on the Second and Howard Streets National Register District would be less than significant.

With respect to the New Montgomery–Second Street Conservation District, both as currently defined and as proposed for expansion, only the first two of the above-noted buildings to be demolished for the planned Caltrain extension are within the district, and their loss would affect a considerably smaller area at the southeastern-most border of the district. Because of this, and because the proposed 222 Second Street project is outside this district and separated by the width of both Second and Howard Streets from the buildings to be demolished for the Caltrain extension, the project would not result in a significant cumulative impact.

In light of the above, the project would have a less-than-significant impact on historical resources, and no mitigation is required.

Mitigation and Improvement Measures

M-CP-1 **Archeological Research Design and Treatment Plan:** Based on a reasonable presumption that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project

sponsor shall retain the services of a qualified archeological consultant having expertise in California prehistoric and urban historical archeology. The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (ERO). All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines Sections 15064.5 (a) and (c).

Archeological Testing Program. Evidence of prehistoric settlement has been discovered in the project vicinity, such as the prehistoric midden sites CA-SFR-135 and CA-SFR-112. The archeological deposits associated with prehistoric settlement include shellmound deposition, prehistoric flaked-stone, ground stone, shell, and bone artifacts, house floors, and human remains. Previous archeological and geotechnical boring indicate that a marsh deposit, characterized by a reddish-brown to orange-brown organic sandy clay layer (3-10 ½ feet thick), is located 18 feet to 28 feet below ground surface. Although there has been no indication this layer contains evidence of cultural materials, i.e., shell, fire-affected rock, bone, or culturally developed soils, its depth is consistent with buried prehistoric midden sites in the vicinity. Since it is impractical to conduct additional archeological testing through trench excavations to the depths of potential prehistoric deposits, archeological monitoring shall be conducted during construction-related excavations in depths between 18 and 28 feet below surface, as discussed below.

Archeological Monitoring Program. Archeological monitoring shall be carried out during the excavation of soils between 0 feet and 31 feet below the present (pre-construction) ground surface. Soils below 31 feet are not expected to contain cultural remains, as these depths would likely pre-date human occupation.

All aspects of the Plan shall be administered by William Self Associates (WSA)'s Principal Investigator, who possesses the academic background and experience for historic archeological research defined in the Secretary of the Interior's Professional Qualifications Standards CFR 66, Appendix C, (48 FR 44738-9) and is certified by the Register of Professional Archeologists.

The Field Archeologist(s) shall report on a daily basis to the project's Construction Manager. Requests for archeological work to be conducted within the excavation area

shall be directed to the Construction Manager. Prior to the commencement of construction, the Construction Manager(s) shall be provided with training in the various types of cultural material or features expected to be encountered during project excavations. Training shall be conducted or supervised by WSA's Principal Investigator.

At the discretion of the Principal Investigator and in consultation with the San Francisco Environmental Review Officer (ERO), a Field Archeologist shall be on-site during excavation of soils or strata likely to contain cultural materials. All excavation and trenching with backhoe or bulldozer that are conducted in levels thought to potentially contain cultural material shall be monitored. Based on data recovered through archeological testing, historic cultural material may be encountered immediately below the foundations of the most recent structures on the site, down to approximately 8 feet below current grade. Prehistoric deposits, although not observed during the previous testing program, may lie at deeper levels, approximately 18-28 feet below grade. The Field Archeologist shall monitor the excavations of overlying soils along Howard, Second and Tehama streets that may expose pre-1906 building foundations, and in the central area where other historic privies may be exposed. The Field Archeologist should also monitor excavation within the project area to ensure that prehistoric deposits are not disturbed before they can be assessed for potential significance.

In the event buried cultural material is encountered during project construction, in consultation with the Construction Manager, monitors shall be able to temporarily redirect excavation until an assessment and/or documentation of the resource can be completed. Monitors shall collect all diagnostic artifacts for further analysis.

The Construction Manager, to ensure workplace safety and efficiency, shall be responsible for overseeing the activities of the archeologist within the excavation per the site safety plan. Evaluation of excavated material shall be conducted on-site, but outside of the excavation, or when all work in the area of the find has stopped at the direction of the Construction Manager. Full safety equipment shall be worn on-site at all times.

The Field Archeologist(s), through coordination with the Construction Manager shall have the opportunity to screen random samples of excavated material within an area adjacent to the construction alignment. Field Archeologists shall be permitted to signal equipment operators to place a sample of excavated material next to a screening station, where the soil shall be screened and artifacts, if any, recovered. Provenience of the sample would be recorded, as accurately as possible using the existing project engineering stations. Should potentially significant cultural materials be identified during screening of the sample, the Principal Investigator and the Construction Manager shall consult with the ERO to determine whether to redirect machinery to temporarily allow the Field Archeologist to recover *in-situ* cultural materials, temporarily allow machinery to be used solely to supply the Field Archeologist with excavated soils for continued

screening (thus allowing a larger sample of the cultural debris to be salvaged) or to return to standard operations, permitting soil samples to be screened randomly.

The Field Archeologist shall remain well clear of earth moving and excavation equipment. In the event cultural material or archeological features are exposed during construction excavation, the Field Archeologist may request the equipment operator to stop for a period of time sufficient to allow identification and preliminary assessment of the object(s) or feature(s). The Field Archeologist may also take advantage of equipment downtime or breaks in construction activity to examine the ground surface.

The Field Archeologist shall take advantage of equipment “down time,” working during operator breaks and lunch or, in consultation with the Construction Manager, outside of scheduled work shifts. This will allow for optimum viewing of the ground surface with no interference from operating machinery. Coordination between the Field Archeologist and the Construction Manager is expected to address the anticipated need for archeological investigations.

The Field Archeologist shall retain on-site all of the necessary tools to permit efficient use of their time, should recording or data recovery be required. This could include: daily monitoring and feature recording forms, digital camera, measuring tapes, shovels and other hand excavation tools, sifter screens of appropriate size, baggies and marking pens to allow collection of materials, and hammer, stakes, string, or other materials or tools as might be needed.

Once excavations have reached depths at which buried cultural resources are unlikely to be present, the Principal Investigator may elect with the approval of the ERO, to provide for an “on-call” Field Archeologist, relying on the observations of the Construction Manager.

Archeological Data Recovery Program. Data recovery may be necessary if potentially significant cultural deposits are encountered during project construction.

A data recovery operation must be conducted in accordance with a well defined approach or research design. The research design presented above has been formulated to ensure that the results of data recovery can produce direct and indirect benefit to both the scientific community and lay public in an efficient and cost-effective manner. Data recovered shall be analyzed to address the research questions presented in the Research Design regarding the history of San Francisco, and shall take into account previous relevant research in the area. Specific recovery methods and analysis techniques are discussed below, as are categories of artifacts that shall be collected, as well as those for which collection may not be required. Adequate provisions are provided for the modification of the program should unforeseen circumstances arise during construction.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures.* Descriptions of proposed field strategies, procedures, and operations.
- *Cataloguing and Laboratory Analysis.* Description of selected cataloguing system and artifact analysis procedures.
- *Discard and Deaccession Policy.* Description of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program.* Consideration of an on-site/off-site public interpretive program during the course of the archeological data recovery program.
- *Security Measures.* Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report.* Description of proposed report format and distribution of results.
- *Curation.* Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Human Remains and Associated or Unassociated Funerary Objects. The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and Federal laws. This shall include immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec. 5097.98). The archeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (CEQA Guidelines Sec. 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects.

Final Archeological Resources Report. The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.

Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Major Environmental Analysis division of the Planning Department shall receive three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public

interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.

On-Site Security. The exposure of sub-surface archeological deposits carries with it the inherent risk of looting and destruction of valuable and spatially-sensitive archeological information, as was seen during the previous archeological testing at the site (Archeo-Tec 1990). Consequently, prior to penetration of the existing hardscape, a security fence shall be erected around the project parcel. Once the hardscape has been removed and archeological testing begins, a security guard shall be employed to provide security during those periods when the site is otherwise unoccupied. It shall be the security guard's responsibility to insure that no unauthorized excavations occur and no cultural material is removed from the site.

Implementation of the above measure would reduce Impact CP-1 to a less-than-significant level.

Conclusion

In summary, the proposed project would result in a less-than-significant impact on the William Volker Building at 631 Howard Street because demolition of the loading dock would remove a non-character-defining feature and because construction of the proposed project would not adversely affect five of the seven aspects of the integrity of this resource. Moreover, the massing and design of the proposed project's base would be consistent with the adjacent 631 Howard Street building. The project would not result in a significant impact, either individually or cumulatively, on other individual buildings or on the New Montgomery, Mission, and Second Streets District, the New Montgomery–Second Street Conservation District (as currently delineated or as expanded) or the Second and Howard Streets National Register District.

E. Transportation

A transportation study was prepared for the EIR, and information from that document is used and summarized in this section.⁴⁹

Setting

Street System

Interstate Highway 80 (I-80) and U.S. Highway 101 (U.S. 101) provide the primary regional access to the project site, linking the area to the East Bay (I-80, via the Bay Bridge) and to the North Bay (U.S. 101, via the Golden Gate Bridge) and the Peninsula and South Bay (U.S. 101). U.S. 101 merges with I-80 at an elevated structure in the vicinity of Division and Tenth Streets. Access to and from I-80 is provided via on- and off-ramps at Fremont, Harrison/Essex, First/Harrison, Fifth/Bryant, and Fourth/Harrison Streets. Ramps to and from the U.S. 101 freeway are at Fourth/Harrison and Fourth/Bryant Streets. I-280 provides alternative access to the Peninsula/South Bay, with ramps at King Street (near Fifth Street) and Sixth Street (at Brannan Street).

Within the project vicinity, Third, Fourth and Harrison Streets, and portions of Howard and First Streets are designated in the Transportation Element of the *San Francisco General Plan* as Transit Preferential Streets. On these streets, priority is given to transit vehicles over autos during commute and business hours on weekdays usually along curbside lanes. Howard, Folsom, Harrison, First, Third and Fourth Streets are designated in the Transportation Element as Major Arterials, which the *General Plan* defines as “cross-town thoroughfares whose primary function is to link districts within the City and to distribute traffic from and to the freeways.” A portion of Third Street is part of the Citywide Pedestrian Network. Second, and Third Streets are Neighborhood Commercial Pedestrian Streets. Second Street (Route 11), and Howard and Folsom Streets (Route 30) are designated as Citywide Bicycle Routes in the Transportation Element. Howard and Folsom Streets each has a Class II bicycle lane, and Second Street is a Class III route, meaning bicyclists and motorists share the roadway width. Second Street was identified as one of 60 near-term bicycle route network improvement projects in the San Francisco Bicycle Plan, although the Second Street project was not approved with the remainder of the Bicycle Plan in August 2009. All major intersections in the vicinity of the project site are traffic signal controlled, except the intersection of Second and Tehama Streets, at which traffic on Tehama Street is controlled by stop signs.

Howard Street is a one-way street west of Fremont Street with four travel lanes in the westbound direction, and a two-way street with two travel lanes in each direction between The Embarcadero and Fremont Street. Folsom Street is a one-way street west of Main Street with four travel lanes in the eastbound direction, and a two-way street with three eastbound lanes and one westbound lane between The Embarcadero and Main Street. Harrison Street is a two-way street between The Embarcadero and Third Street, and one-way westbound west of Third Street. Tehama Street is a discontinuous alley, south

⁴⁹ Environmental Science Associates, *222 Second Street Office Building Transportation Report*, February, 2009. This report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Project File No. 2006.1106E.

of and parallel to Howard Street. It has a single one-way dead-end street adjacent to the project site, providing access for the 55 Hawthorne Street parking garage, the loading dock for 631 Howard Street, and the surface parking lot currently on the project site. Second Street has two travel lanes in each direction, except between Mission and Market Streets where there is one northbound lane (with the two southbound lanes). Third Street is a one-way northbound street, with three travel lanes plus a bus-only “diamond” lane south of Folsom Street; the bus-only lane shifts to the curb north of Folsom Street, providing four “non-bus-only” through lanes. First Street is a one-way southbound street, with three travel lanes; between Market and Howard Streets, one lane is reserved for transit vehicles only. Hawthorne Street is a one-way southbound street, connecting Howard Street to Harrison Street. Parking is generally permitted on both sides of area streets, but is restricted on Howard, Mission, Third and First Streets in the p.m. peak period.

Transit

Currently, stops for 10 Muni local and express bus lines and the F-line streetcars are within walking distance (considered one-quarter of a mile) of the project, as are the Muni Metro light rail system and BART, accessible two blocks north of the site, at the Second Street entrance to the Montgomery station. AC Transit, SamTrans, and Golden Gate Transit are about one and a half blocks to the northeast, at the Transbay Transit Terminal. Caltrain is available at the Fourth/Townsend depot via a connecting Muni line.

Parking

Surveys of existing publicly available on-street and off-street parking capacity and occupancy were taken in the area generally bounded by Mission, First, Harrison, and Third Streets. There are about 4,350 off-street parking spaces within the study area, with mid-afternoon weekday occupancy levels at about 84 percent. On-street parking in the project area, predominantly comprised of metered spaces, is effectively at capacity.

Pedestrians/Bicycles

Based on field observations, conducted during the weekday midday and p.m. peak periods, the volume of pedestrians in the project site vicinity is low to moderate (with higher pedestrian volumes on Second Street than on Howard Street), i.e., “unimpeded”, with generally normal walking speeds, and the freedom to bypass other pedestrians (although requiring interaction with other pedestrians). Frequent incidences of conflicts were observed between turning vehicles and pedestrians within the southerly crosswalk at the nearby (to the west) intersection of Howard and Hawthorne Streets. There is an all-pedestrian phase, and an autos-only phase, for the traffic signal at this intersection, and therefore, the sources of the conflicts are non-compliance to traffic control by pedestrians (crossing Hawthorne Street against the “Don’t Walk” signal), and drivers making left turns on the red signal (which is not prohibited).

Bicycle Routes 11 and 30 are located along streets that border the project site. Route 11 is a Class III bicycle facility, and runs in both directions on Second Street. Route 30 runs westbound on Howard Street (and eastbound on Folsom Street), with a wider curb parking lane (Class III) provided east of Fremont

Street, and a striped bicycle lane (Class II) provided between Fremont and Eleventh Streets. A substantial number of bicyclists (predominantly messengers and commuters) were observed to be riding in the project site vicinity, along Second and Howard Streets.

As noted in Chapter III, the Board of Supervisors in August 2009 approved the San Francisco Bicycle Plan. The Final Environmental Impact Report for the Bicycle Plan analyzed a project calling for new bicycle lanes on Second Street but, as stated above, this specific improvement was removed from the list of projects approved by the Municipal Transportation Agency (MTA) Board of Directors and the Supervisors, in order to allow for additional study. The MTA plans to hold a community-based design charrette for the Second Street bicycle lane design in 2010, followed by additional staff review and the release of a new preferred plan in 2011 – 2012.⁵⁰

Impacts

Significance Criteria

The project could have a significant effect on the environment if it would:

- Cause the intersection level of service to deteriorate from LOS D or better to LOS E or F, or from LOS E to LOS F as a result of the addition of project traffic.⁵¹ The project may result in significant adverse impacts at intersections that operate at LOS E or F under baseline conditions depending upon the magnitude of the project's contribution to the worsening of the average delay per vehicle. In addition, the project would have a significant adverse impact if it would cause major traffic hazards or contribute considerably to cumulative traffic increases that would cause deterioration in levels of service to unacceptable levels;
- Cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service; or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result;
- Result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas; or
- Create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.

Parking supply is not considered to be a part of the permanent physical environment in San Francisco.⁵² Parking conditions are not static, as parking supply and demand varies from day to day, from day to night, from month to month, etc. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel.

⁵⁰ Damon Curtis, Municipal Transportation Agency, personal communication with Michael Jacinto, MEA, January 25, 2010.

⁵¹ The LOS analysis provides a standardized means of rating an intersection's operating characteristics on the basis of traffic volumes, intersection capacity, and delays. LOS A represents free-flow conditions, with little or no delay, while LOS F represents congested conditions, with extremely long delays; LOS D (moderately high delays) is considered the lowest acceptable level in San Francisco.

⁵² Under California Public Resources Code (CEQA) Section 21060.5, "environment" can be defined as "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise and objects of historic or aesthetic significance."

Parking deficits are considered to be social effects, rather than impacts on the physical environment as defined by CEQA. Under CEQA, a project's social impacts need not be treated as significant impacts on the environment. Environmental documents should, however, address the secondary physical impacts that could be triggered by a social impact. (CEQA Guidelines Section 15131(a).) The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, or noise impacts caused by congestion. In the experience of San Francisco transportation planners, however, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles or travel by foot) and a relatively dense pattern of urban development, induces many drivers to seek and find alternative parking facilities, shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service in particular, would be in keeping with the City's "Transit First" policy. The City's Transit First Policy, established in the City's Charter Section 16.102 provides that "parking policies for areas well served by public transit shall be designed to encourage travel by public transportation and alternative transportation."

The transportation analysis accounts for potential secondary effects, such as cars circling and looking for a parking space in areas of limited parking supply, by assuming that all drivers would attempt to find parking at or near the project site and then seek parking farther away if convenient parking is unavailable. Moreover, the secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area. Hence, any secondary environmental impacts which may result from a shortfall in parking in the vicinity of the proposed project would be minor, and the traffic assignments used in the transportation analysis, as well as in the associated air quality, noise and pedestrian safety analyses, reasonably addresses potential secondary effects.

The project would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within the proposed on-site loading facilities or within convenient on-street loading zones, and if it would create potentially hazardous traffic conditions or significant delays affecting traffic, transit, bicycles or pedestrians.

Construction-related impacts on transportation systems generally would not be considered significant due to their temporary and limited duration.

Impact Analysis

Travel Demand Analysis

The project would generate about 10,950 total person trips per day, with a total of about 1,075 total person trips during the p.m. peak hour, of which about 250 would be vehicle trips,⁵³ 510 would be transit trips, 155 would be walking trips, and the remainder by other modes such as bicycle, motorcycle and taxi.⁵⁴

The project would be subject to a variety of transportation management requirements under *Planning Code* Section 163, whose intent is to assure that adequate measures are undertaken and maintained to minimize transportation effects of added office employment in the downtown and South of Market area, by facilitating the effective use of transit, encouraging ridesharing, and employing other practical means to reduce commute travel by single-occupant vehicles.

Traffic Impacts

Impact TR-1: Traffic generated by the proposed project would degrade level of service at certain local intersections. (Significant but Mitigable)

Of the 250 net new p.m. peak-hour vehicle trips generated by the project, about 54 percent would be to or from locations within San Francisco, while the remainder would be headed to or from the East Bay, the Peninsula/South Bay, and the North Bay. East Bay-bound vehicles would make up approximately one-fifth of the outbound vehicle trips, or about 40 additional cars heading for the East Bay (assumed to be via the Bay Bridge) in the p.m. peak hour. These 40 additional cars would incrementally contribute to the substantial queuing that currently occurs on access routes to the Bay Bridge, such as First Street. Peninsula/South Bay-bound traffic would amount to about 25 new vehicles, which likewise would incrementally contribute to queuing that now occurs at southbound access routes, such as the on-ramp at Fourth/Harrison Streets.

As shown in Table 2, eight of the 11 signalized intersections studied currently operate at good (LOS D⁵⁵ or better) service levels during the p.m. peak hour. Two of the three intersections that operate at unacceptable LOS E or F conditions are located on the primary approaches to I-80 and the Bay Bridge (Harrison/First Streets, and Harrison/Fourth Streets), and traffic to the bridge passes through the third intersection (Harrison/Second Streets). The one unsignalized study intersection, Second/Tehama Streets, operates at an acceptable LOS D. The intersections selected for analysis were chosen because they would be the most likely to be affected by project traffic. While project-generated vehicles would also travel through other intersections, it would have less impact on intersections farther from the project site, as vehicles would disperse among the available streets as they travel away from the site.

⁵³ The 250 vehicle trips represent 365 person-trips by vehicle; the number of vehicle trips is less than the number of person trips by vehicle because some person trips are made in vehicles carrying more than one person.

⁵⁴ Travel demand for the proposed project was calculated on the basis of trip generation rates, and p.m. peak-hour percentage of daily traffic, for Office and Retail uses presented in the San Francisco Planning Department, *Guidelines for Environmental Review: Transportation Impacts* (Appendices 1 and 2).

⁵⁵ Traffic operations are characterized using a p.m. peak-hour level of service (LOS) analysis, which provides a standardized means of rating an intersection's operating characteristics on the basis of traffic volumes, intersection capacity and delays. LOS A represents free-flow conditions, with little or no delay, while LOS F represents congested conditions, with extremely long delays; LOS D (moderately high delays) is considered the lowest acceptable level in San Francisco.

TABLE 2
PM PEAK-HOUR INTERSECTION LEVELS OF SERVICE (LOS)
AND AVERAGE STOPPED DELAY IN SECONDS PER VEHICLE^a

| Intersection | Existing (2007) | | Existing + Project | | Cumulative (2025) ^b | | Project Contribution ^c |
|--|--------------------|----------------------|-----------------------|----------------------|-----------------------------------|----------------------|--------------------------------------|
| | LOS ^d | Delay ^d | LOS ^d | Delay ^d | LOS ^d | Delay ^d | |
| 1. Mission Street / Third Street | D | 38.0 (v/c = 0.74) | D | 42.9 (v/c = 0.76) | F | >80 (v/c = 1.24) | 2.3% |
| 2. Howard Street / Third Street | B | 19.2 (v/c = 0.70) | C | 20.0 (v/c = 0.72) | F | >80 (v/c = 0.98) | 5.2% |
| 3. Howard St / New Montgomery St | D | 36.8 (v/c = 0.92) | D | 36.8 (v/c = 0.93) | F | >80 (v/c = 1.23) | 6.5% |
| 4. Howard Street / Second Street | C | 25.1 (v/c = 0.92) | D | 51.8 (v/c = 1.08) | F | >80 (v/c = 2.17) | 4.1% |
| 5. Howard Street / First Street | C | 26.2 (v/c = 1.00) | C | 26.3 (v/c = 1.00) | F | >80 (v/c = 1.79) | 0.5% |
| 6. Howard Street / Fremont Street | C | 20.2 (v/c = 0.71) | C | 20.3 (v/c = 0.71) | F | >80 (v/c = 1.16) | 0.6% |
| 7. Folsom St. / Hawthorne St. | D | 47.7 (v/c = 0.86) | D | 47.7 (v/c = 0.86) | E | 76.6 (v/c = 1.09) | 1.1% |
| 8. Folsom Street / Second Street | D | 36.8 (v/c = 0.99) | E | 60.5 (v/c = 1.08) | F | >80 (v/c = 2.13) | 7.4% |
| 9. Harrison Street/ Fourth Street | E | 62.0 (v/c = 0.98) | E | 68.1 (v/c = 0.99) | F | >80 (v/c = 1.25) | 2.7% |
| 10. Harrison Street / Second Street | E | 55.7 (v/c = 1.29) | E | 64.2 (v/c = 1.47) | F | >80 (v/c = 4.10) | 5.1% |
| 11. Harrison Street / First Street | F | >80 (v/c = 1.51) | F | >80 (v/c = 1.58) | F | >80 (v/c = 2.32) | 2.7% |
| 12. Second Street / Tehama Street (side-street stop-controlled) | D | 28.7 | F | >50 | F | >50 | N/A |

^a Levels of service (LOS) were determined using the analysis methodologies presented in the 2000 *Highway Capacity Manual*.

^b Cumulative volumes were derived on the basis of information about traffic growth patterns, which used the San Francisco County Transportation Authority countywide travel demand forecasting model, taking into account the development anticipated in the vicinity of 222 Second Street, plus the expected growth in housing and employment for the remainder of San Francisco and the nine-county Bay Area.

^c Project's percent contribution to the 2007-to-2025 growth in cumulative traffic volumes at intersections projected to operate at LOS E or F. **Bold** typeface signifies a cumulatively considerable contribution to LOS F conditions (a significant impact), based on the project's contribution to the intersection's critical turning movements; that is, whether the project would add a substantial number of vehicles to these movements (see page 83 for further discussion of the method for determining impact significance).

^d The LOS and delay for signalized intersections represent conditions for the overall intersection. The LOS and delay for side-street stop-controlled unsignalized intersections represent conditions for the worst (most congested) movements (typically left turns from the side street onto the main street). For an intersection operating at LOS E or F under any analyzed scenario, the volume-to-capacity ratio (v/c) is presented to provide another measure of how the intersection is operating.

Bold typeface indicates a significant project or cumulatively impact.

SOURCES: Environmental Science Associates and AECOM

With the addition of project traffic,⁵⁶ operating conditions at the Folsom/Second Streets intersection would degrade from LOS D to an unacceptable LOS E, which would constitute a significant project impact. Also, while the Harrison/Second Streets intersection would remain at the same unacceptable

LOS E, because project traffic would constitute about 16 percent of the southbound left turn volume (which would operate with unacceptable LOS F conditions), the increased delay at this intersection would constitute a significant project traffic impact. At the unsignalized study intersection of Second/Tehama Streets, the addition of project-generated traffic would cause side-street left turns to degrade to unacceptable LOS (eastbound Tehama left turns from LOS C to LOS F, and westbound Tehama left turns from LOS D to LOS E), which would constitute a significant project traffic impact.⁵⁷ Traffic conditions would satisfy the Peak Hour Signal Warrant for the Second/Tehama intersection. Conditions would also worsen from existing conditions at two other study intersections (Howard/Third Streets and Howard/Second Streets), but would remain at an acceptable LOS D or better in each case, and therefore project traffic would not result in a significant impact at these two intersections.

Implementation of Mitigation Measures M-TR-1a, p. 89, and M-TR-1b, p. 89, would reduce project impacts to a less-than-significant level at the intersections of Second and Tehama Streets and Folsom and Second Streets. However, no mitigation is available for the impacts at the intersection of Second and Harrison Streets, and this impact would be significant and unavoidable.

Cumulative Traffic Impacts

Impact TR-2: Traffic generated by the proposed project, in conjunction with past, present, and reasonably foreseeable future projects would further degrade level of service at certain local intersections. (Significant and Unavoidable)

Cumulative traffic impacts were assessed by adding projected traffic increases from anticipated future local and development (including projects proposed within the Transit Center Plan study area) to future baseline volumes derived from the San Francisco County Transportation Authority countywide travel demand forecasting model.⁵⁸ Due to the substantial increase in development anticipated for the South of Market area by 2025, all 12 study intersections would operate at unacceptable LOS E or F under 2025 cumulative conditions (as compared to three intersections operating at LOS E or F under Existing conditions).

⁵⁶ Analysis of project effects conservatively assumed that all project-generated vehicular traffic would use parking spaces provided in the on-site garage. Additionally, while vehicles currently parking in the on-site parking lot (to be eliminated) would be redistributed to other parking facilities in the area, those vehicles were conservatively assumed to continue to travel through the study intersections.

⁵⁷ Currently most drivers leaving the project site's surface parking lot exit onto Howard Street, and nearly all who exit via Tehama turn right onto Second Street (only about 5 percent of exiting traffic turns left onto northbound Second Street). Left turns from Tehama onto Second are potentially dangerous (near collisions were observed) mainly because sight distance is restricted by parked vehicles and by buses at the bus stop just north of Tehama Street.

⁵⁸ The cumulative analysis was prepared in advance of the more recent Transportation Authority modeling efforts undertaken in connection with the proposed Transit Center Plan and EIR. However, a list of reasonably foreseeable developments in the Transit Center Plan area was developed that is comparable to growth anticipated under the Transit Center Plan and provides a reasonable projection of cumulative conditions in 2025.

To assess the effect of added traffic generated by the project on the above-described LOS E or F cumulative 2025 conditions, the percent contribution of project trips to future volumes was determined and, for intersections where the project contribution to cumulative growth would be 5 percent or greater, the project contribution to the traffic volumes at the critical movements are evaluated further to determine whether the project contribution to a critical movement would be substantial. As shown in Table 2, in addition to the project-specific significant traffic impact at the Folsom/Second, Harrison/Second, and Second/Tchama intersections for Existing Plus Project conditions, the project's share of future traffic growth at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets would constitute a cumulatively considerable traffic contribution to adverse 2025 cumulative traffic conditions, and would be considered a significant impact. That determination was reached based on the examination of the traffic volumes for the vehicle movements that determine the overall level of service performance at the intersections projected to operate at LOS E or F under 2025 cumulative conditions. The project would add substantial numbers of vehicles to turning movements that determine the overall LOS F performance (i.e., "critical" movements) at these four intersections.

The project's traffic contribution to adverse cumulative traffic conditions at the other seven signalized intersections projected to operate at LOS E or F would be considered less than significant. That was also determined based on the examination of the traffic volumes for the traffic movements that determine overall level of service performance at the intersections of Mission/Third, Howard/Second, Howard/First, Howard/Fremont, Folsom/Hawthorne, Harrison/Fourth, and Harrison/First. In these case, the project would either add traffic to movements that would continue to operate satisfactorily, or would add a small number of vehicles to intersection movements that would operate poorly under cumulative conditions.

It is noted that the Transbay Terminal / Rincon Hill areas of the City have been, and currently are being (as part of the proposed Transit Center Plan analysis), studied for possible development scenarios, and associated road network configurations to best support that development (including possible conversion of portions of Folsom and Howard Streets from one-way to two-way configuration). The effect of possible reconfiguration of roads on traffic flow in the project area has not been quantified, but in general, two-way streets have a lower carrying capacity than one-way streets (with resulting worse LOS at intersections). However, some travel paths (including those between the project garage and trip origins and/or destinations) could be less circuitous with two-way streets than with one-way streets. Until road network changes are formally proposed, their effect on impacts described herein for the 222 Second Street project is considered speculative. Nevertheless, it can be stated with a high degree of certainty that the proposed 222 Second Street project would not result in such a substantial contribution to traffic congestion that it would make a considerable contribution to potential cumulative impacts at intersections other than those noted above, regardless of potential future changes in the street network. Therefore, the project would not result in a significant impact with respect to network changes that might be proposed as part of the proposed Transit Center District Plan or other such planning efforts.

As with existing-plus-project conditions, traffic from the 222 Second Street project and from other projects considered in the cumulative analysis would affect intersections other than those included in the project-specific analysis for 222 Second Street. Traffic destined for the Bay Bridge and for other freeway

on-ramps in or near the Transbay Study Area would continue to experience congestion in the p.m. peak hour, and the project would contribute incrementally to increased delays at some of these intersections. As with existing-plus-project conditions, however, project traffic would have less impact on intersections farther from the project site as vehicles bound for different destinations disperse.

Projected congestion levels could be somewhat less if measures to enhance transit service and encourage the use of alternate means of transportation are successful. Similarly, congestion levels in the area could be somewhat greater if the capacity of street segments is reduced or if the rate at which vehicles can enter the freeway is reduced.

No mitigation is available for the above-described significant impacts beyond Measures M-TR-1a and M-TR-1b, discussed above. However, those measures would not reduce the cumulative impacts to a less-than-significant level at the intersections of Howard and Third Streets, Howard and New Montgomery Streets, Folsom and Second Streets, and Harrison and Second Streets.

Transit

Impact TR-3: Transit ridership generated by the proposed project would not result in unacceptable levels of transit service, or cause a substantial increase in delays or operating costs. (Less than Significant)

The project would generate approximately 510 net new p.m. peak-hour transit trips. Of these trips, about 300 would be on Muni, and would be dispersed over the 17 Muni routes (local and express buses, streetcar and Metro trains) that serve the project area. Project transit ridership would incrementally increase p.m. peak-period capacity utilization⁵⁹ on the four Muni screenlines (which are imaginary cordon lines drawn around the greater downtown area for purposes of analyzing Muni ridership by corridor). All Muni screenlines currently operate better than Muni's service standard of 85 percent capacity utilization,⁶⁰ although the Metro corridors (Southwest screenline), and Other Lines (Southeast screenline) currently exceed the standard. However, the increase in ridership due to the project would be no more than 1 percentage point on any corridor, and would not be significant, inasmuch as the increased ridership would be dispersed over dozens of Muni vehicles and would not result in exceedances of Muni capacity. The project would be subject to the Transit Impact Development Fee, which is a one-time fee assessed against downtown office projects to offset increased capital costs to Muni to provide additional capacity to serve the increased demand from new development.

Project ridership on regional carriers would total about 200 (some riders would also take Muni), with about 40 percent traveling to the East Bay on BART, and another 20 percent on AC Transit; most of the rest would travel to the Peninsula on BART. Project transit trips would increase East Bay BART and AC Transit p.m. peak-period capacity utilization by less than 1 percentage point, and would not measurably

⁵⁹ Capacity utilization is the aggregate number of passengers divided by the aggregate design capacity of the transit vehicles, and may include varying numbers of standees, depending on the transit carrier.

⁶⁰ Muni's service standard is based on differing capacities of its fleet's various sizes of buses and rail vehicles.

affect capacity utilization on Golden Gate Transit, SamTrans, Caltrain, or Peninsula BART service. None of the regional carriers' capacity utilization standards would be exceeded with project transit trips.⁶¹

By 2025, ridership levels on Muni lines is projected to generally grow faster than increases in capacity, and overall p.m. peak-hour ridership across three of the four screenlines, as a percentage of overall capacity, would increase from existing conditions (the southeast screenline being the exception). However, total capacities at the screenlines are expected to increase enough so that aggregate capacity utilizations would be better than the 85-percent standard across all screenlines, with the highest utilization being the southwest screenline (83 percent). The capacity utilization for two subcorridors would exceed the 85-percent standard under cumulative conditions. The Third Street Corridor (southeast screenline) would be the most crowded, at 95 percent (with 222 Second Street project contribution of about 0.6 percent to cumulative conditions), and the Metro Lines (southwest screenline) would have a capacity utilization of 87 percent (with project contribution of about 0.9 percent to cumulative conditions).

Similarly, by 2025, ridership levels on regional transit lines are generally projected to increase faster than increases in capacity (the exception being BART to the East Bay, where capacity is expected to increase due to increased train lengths and higher frequencies). The biggest increase in ridership would occur at the North Bay screenline. Each regional transit operator would continue to operate at better than their load factor standard. Trips generated by the 222 Second Street project, however, would represent no more than a 1 percent contribution to cumulative conditions.

Because of the relatively limited effect of the project in the context of long-range cumulative growth, the project contribution would not be "considerable." Therefore, the project would not have a significant impact on transit services and capacity, and no mitigation is required.

Parking

The proposed project is in the C-3-O (Downtown Office) zoning district, in which off-street parking is not required for commercial uses, and is permitted for up to 7 percent of gross floor area. The project parking garage would accommodate up to about 54 parking spaces (capacity for about 80 vehicles through the use of valet parking operations). The project would not exceed 7 percent of gross floor area devoted to parking, and would thereby comply with *Planning Code* Section 151.1.

The project would create long-term parking demand for about 440 parking spaces, and short-term parking demand for about 122 equivalent daily spaces, for a total parking demand of about 562 daily spaces. The project would eliminate 70 existing parking stalls (an approximate 125-vehicle capacity with valet parking) available to the general public on the project site, resulting in a total unmet demand of about 610 equivalent daily spaces, when accounting for the proposed 80-vehicle capacity. Drivers who currently park in the on-site lot would have to find other lots and garages in the vicinity, which would increase the average weekday mid-afternoon occupancy in off-street parking garages within the project area from the existing 84 percent to about 98 percent, assuming no change in travel modal splits and no use of on-street

⁶¹ Golden Gate Transit, AC Transit and Caltrain have a passenger-per-seat standard of 100 percent. BART has a peak-hour passenger-per-seat standard of 135 percent.

parking spaces. Cumulative development would result in a further decrease in the parking supply in the project vicinity: development of the new Transit Center, in particular, would displace several hundred parking space, including 260 spaces in the existing terminal and as approximately many valet-operated spaces on surface lots outside the terminal. Additional spaces would be eliminated by development anticipated on surface lots on Howard, Tehama, and Folsom Streets. Additional spaces have already been displaced on Main Street for construction of a temporary transit terminal to accommodate bus operations when the Transbay Terminal is demolished, likely in 2010.

As noted above in the discussion of Significance Criteria, parking deficits are considered to be social effects, rather than physical impacts on the environment as defined by CEQA. Therefore, parking effects would not be significant.

Loading

Under *Planning Code* Section 152.1, the project would be required to provide four off-street (standard truck) freight loading spaces.⁶² The *Planning Code* allows the substitution of two service van spaces for each full-size loading space, provided that at least one-half of the required number of spaces are provided for trucks (ignoring any resulting fraction). Application of that substitution formula for the project would yield a requirement for two truck spaces and four van spaces. The project would provide two *Planning Code*-complying standard-truck loading spaces at-grade in the loading dock off Tehama Street, and four service vehicle spaces (one in the loading dock and three on the first parking level below grade), which would meet the *Planning Code* requirement.

The project would generate a total of about 111 service vehicle stops per day.⁶³ Calculated average hourly loading demand would be about five spaces, and peak demand would be about six spaces. The project's two off-street truck loading spaces and four off-street van spaces would meet the average and peak demand.

Impact TR-4: Operation of the proposed project's off-street loading area would disrupt traffic flow on Tehama Street. (Significant but Mitigable)

Considering the width of Tehama Street, and the size of vehicles likely to make deliveries to the site, vehicles would be able to back into the loading dock, though with temporary impedance of traffic flow on Tehama Street, which would cause temporary disruption of traffic flow (e.g., vehicles traveling to and from the 55 Hawthorne Street parking garage at the end of Tehama Street). The effect on Tehama Street traffic flow during peak traffic periods would be noticeable (although generally limited to vehicles using Tehama Street to access parking in the proposed project and the 55 Hawthorne Street parking garage). During other hours, because traffic volume on Tehama Street would not be heavy, the effect of those short-term delays would be expected to be minimal. However, this impact could be avoided if the project

⁶² City and County of San Francisco, *Planning Code*, Table 152.1: Off-Street Freight Loading Spaces Required (in C-3 and South of Market Districts). Office buildings are required to provide 0.1 spaces per 10,000 sq. ft. of gross floor area (to closest whole number); the project would have about 430,650 sq. ft of gross floor area for office use, not counting areas excluded from gross floor area as defined in *Planning Code* Sec. 102.9(b).

⁶³ Based on Planning Department *Guidelines for Environmental Review: Transportation Impacts*.

sponsor were to request that the San Francisco Municipal Transportation Agency prohibit parking on the north side of Tehama Street to facilitate vehicle movements into and out of the loading/service area, and reduce the amount and duration of temporary disruption of traffic flow (see Mitigation Measure M-TR-4, p. 90). If a driver of a loading/service vehicle were to choose to not use the building's loading spaces (e.g., courier delivery vehicles), then the loading/service vehicle would need to be accommodated through use of metered parking spaces on Howard Street or Second Street, or through double parking in the curbside travel lane on Howard Street or Second Street, affecting traffic flow (particularly Muni service on Second Street). The effect of double-parking on traffic flow during peak traffic periods would be substantial, and direction / encouragement to use the off-street loading spaces (accomplished by signage or other measures) would serve to lessen the incidence of double-parking. Traffic enforcement would also limit double-parking.

Demolition of the loading dock at 631 Howard Street would eliminate one of the three loading spaces currently provided for this five-story office/retail building (two spaces are provided at the rear of the main portion of the building). The 631 Howard Street building has ground-floor space that is currently vacant, and the building therefore has surplus loading capacity. If this vacant space were occupied by retail use(s), the number of post-demolition off-street loading spaces would accommodate the building's loading demand. However, if the ground floor at 631 Howard were occupied by restaurant space, the hourly loading demand would exceed the both the existing and future loading capacity spaces and would increase the unmet demand by one space. The added one-space unmet demand would need to be accommodated through use of metered parking spaces in proximity to the main entrance to the 631 Howard building or could force trucks to wait for a loading space or to double-park on Howard or Second streets, with potential impacts as noted above.

Implementation of Mitigation Measure M-TR-4 would encourage the use of the project loading dock by improving truck access to the dock, thereby avoiding the need for double-parking on Second or Howard Street, and could also allow room for vehicles waiting for access to the 631 Howard Street loading dock. This measure thus would reduce this impact to a less-than-significant level.

Pedestrian and Bicycle Conditions

Impact TR-5: The proposed project would not would result in overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas, nor would it create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. (Less than Significant)

The main pedestrian entrance to the building lobby would be at the center of the Second Street frontage, with additional entrances along Howard Street and Tehama Street. Based on field observations, the volume of pedestrians on area sidewalks is moderate throughout the day, and the quality of peak pedestrian flows is no worse than "unimpeded", indicating generally normal walking speeds, and the freedom to bypass other pedestrians. Based on the likely dispersion of project-generated pedestrian activity among the walkways to transit stops/stations and commercial establishments, conditions on the

sidewalks and crosswalks in the project area would be expected to remain similar to existing conditions (i.e., unimpeded) with the project.

There are designated Citywide Bicycle Routes in the project vicinity (on Market, Sutter, Post, Second, Howard, and Folsom Streets). Bicyclists were observed on other streets, not so designated, in the project area, although the number of bicyclists was not high. The project would provide 46 bicycle parking spaces on the upper parking garage level, along with 8 showers and 30 lockers, meeting the requirements of *Planning Code* Sections 155.4 and 155.3. The project would not be expected to generate a noticeable increase in bicycles in the area, nor would it be expected to noticeably affect existing bicycle conditions in the area.

As described below, project construction would require closure of the Second Street sidewalk for approximately nine months and use of the curb (parking) lane for a covered pedestrian walkway, which would affect use of the proposed southbound bicycle lane on Second Street (temporarily downgraded to a Class III bicycle facility, meaning bicyclists and motorists share the roadway width), should the Second Street bicycle improvements proposed in the Bicycle Plan be implemented prior to project construction. However, this impact, should it occur, would be temporary and would not represent a change from currently existing conditions. Therefore, the impact would be less than significant.

Temporarily increased congestion and/or interruption of pedestrian and bicycle access and routes could be expected as a result of construction of the planned new Transit Center, which would replace the Transbay Terminal. Likewise, other development in the proposed Transit Center District Plan area would result in similar disruptions. However, inasmuch as the proposed 222 Second Street project would be located to the southwest of the great majority of these cumulative construction activities, the project would not be expected to make a considerable contribution to any impacts related to pedestrian or bicycle circulation, because access to and from the project site could avoid most other construction sites. Therefore, no significant impact would ensue.

Because impacts to pedestrians and bicyclists would be less than significant, no mitigation is required.

Construction Impacts

During the projected 21-month construction period, temporary and intermittent traffic and transit impacts would result from truck movements to and from the project site. It is expected that staging would be achieved by having scheduled deliveries due to the lack of onsite storage area; the majority of the job would be staged from Second and Tehama Streets, in a manner consistent with traffic management strategies established in consultation with City staff. Truck movements during periods of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater numbers of vehicles on the streets during the peak hour that would have to maneuver around queued trucks. The sponsor would restrict project-related truck traffic to the hours of 9:00 a.m. to 3:30 p.m., or other hours if approved by the Department of Parking and Traffic (DPT), which would avoid such peak-period effects. The project sponsor has agreed to meet with Muni, DPT, and other responsible city agencies and other project construction managers in the area to determine feasible traffic management and mitigation measures to reduce traffic congestion during construction of this project and other nearby

projects. To minimize cumulative traffic impacts due to lane closures during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction or which later become known. The sidewalks on Howard, Second and Tehama Streets would be closed during portions of the project construction, but a protected pedestrian walkway would be provided in the curb lane on Howard and Second Streets, subject to the granting of a Street Space Permit from the Bureau of Street Use and Mapping of the Department of Public Works, and a Special Traffic Permit from the Department of Parking and Traffic would be required to utilize public street space during project construction; this permit would consider effects on traffic and parking, including bicycle circulation, and MTA could implement additional signage and other measures to ensure bicycle safety during construction. Parking of construction workers' vehicles would temporarily increase occupancy levels in off-street parking lots, either by those vehicles or by vehicles currently parking in on-street spaces that would be displaced by construction workers' vehicles. Construction impacts would be temporary, and would not be significant. As noted above in the context of pedestrian and bicycle circulation, the proposed project's location at the edge of the proposed Transit Center District Plan area would substantially reduce any contribution that project construction might make to areawide construction impacts, and would mean that the project would not result in a significant impact related to cumulative construction activities. Based on the above, no mitigation is required for construction impacts.

Mitigation and Improvement Measures

- M-TR-1a** **Second and Tehama Streets:** At the unsignalized intersection of Second and Tehama Streets, the Parking and Traffic Division of the San Francisco Municipal Transportation Agency would prohibit left turns from Tehama Street onto Second Street using appropriate traffic control devices (e.g., regulatory signs). Implementation of this mitigation measure would improve the levels of service on both Tehama Street approaches to an acceptable LOS D or better. Because this measure is required to mitigate a project impact, implementation of the measure would be the financial responsibility of the project sponsor.
- M-TR-1b** **Folsom and Second Streets:** At the signalized intersection of Folsom and Second Streets, the Parking and Traffic Division of the San Francisco Municipal Transportation Agency would modify the signal timing to provide more time for traffic on southbound Second Street. Evaluation of possible signal timing modifications indicates that shifting two seconds of Green from eastbound Folsom Street to southbound Second Street would improve the p.m. peak-hour level of service to an acceptable LOS D. Because this measure is required to mitigate a project impact, implementation of the measure would be the financial responsibility of the project sponsor.

Significance after Mitigation: Significant and Unavoidable at the intersection of Second/Harrison Streets; Less than Significant at the intersections of Second/Tehama Streets and Folsom/Second Streets.

Mitigation Measure TR-1a (left-turn controls and/or physical prohibition on left turns) would reduce the project's impact at the Second/Tehama Streets intersection to a less-than-significant level. Mitigation

Measure TR-1b (signal retiming) would reduce the project's impact at the Second and Folsom Streets intersection to a less-than-significant level. No feasible mitigation is available for the project's impact at Second/Harrison Streets.

M-TR-2: No feasible mitigation is available for the cumulative impacts at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets, and this impact would be significant and unavoidable. (Previously identified mitigation for project impacts at the Second and Tehama Streets intersection would also avoid a significant cumulative impact there.)

Significance after Mitigation: Significant and Unavoidable at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets; Less than Significant at the intersection of Second/Tehama Streets, Mission/Third Streets, Howard/Second Streets, Howard/First Streets, Howard/Fremont Streets, Folsom/Hawthorne Streets, Harrison/Fourth Streets, and Harrison/First Streets.

M-TR-4 **Parking Prohibition:** The project sponsor would formally request that the San Francisco Municipal Transportation Agency hold a public hearing to prohibit parking spaces on the north side of Tehama Street, along the southern project site frontage, prior to occupancy of the project building. There are currently five metered parking spaces in this area (four regular spaces, and one yellow loading space).

Significance after Mitigation: Less than Significant.

Conclusion

In summary, the project would result in a project-specific significant unavoidable traffic impact at the intersection of Second and Harrison Streets and cumulative significant unavoidable impacts at four intersections—Howard and Third Streets, Howard and New Montgomery Streets, Folsom and Second Streets, and Harrison and Second Streets. The project would not result in significant impacts that could not be mitigated with regard to transit, pedestrian or bicycle conditions, parking or loading, or construction.

F. Noise

Setting

Existing Ambient Noise

Ambient noise levels in the project vicinity are typical of noise levels in greater San Francisco, which are dominated by vehicular traffic, including trucks, cars, Muni buses, and emergency vehicles. Based on observations made at the project site, traffic on Howard and Second Streets is the predominant noise source in the project vicinity and generates moderate to high levels of traffic noise. Observation also indicates that surrounding land uses do not conduct noticeably noisy operations.

The Environmental Protection Element of the *San Francisco General Plan* contains Land Use Compatibility Guidelines for Community Noise.⁶⁴ These guidelines, which are similar to state guidelines promulgated by the Governor's Office of Planning and Research, indicate maximum acceptable noise levels for various newly developed land uses. For office uses, the maximum "satisfactory" noise level without incorporating noise insulation into a project is 70 dBA (Ldn), while the guidelines indicate that office development should be discouraged at noise levels above 75 dBA (Ldn).⁶⁵ Where noise levels that exceed satisfactory level (i.e., 70 dBA), a detailed analysis of noise reduction requirements will normally be necessary prior to final review and approval. Based on modeling of traffic noise volumes conducted by the San Francisco Department of Public Health,⁶⁶ the traffic noise level in the project area vicinity is generally between about 65 and 70 dBA (Ldn), which would mean that a detailed noise study should be undertaken for the proposed project.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to noise if it would:

- Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or

⁶⁴ *San Francisco General Plan*, Environmental Protection Element, Policy 11.1.

⁶⁵ Sound pressure is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 dB to 140 dB corresponding to the threshold of pain. Because sound pressure can vary by over one trillion times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. Owing to the variation in sensitivity of the human ear to various frequencies, sound is "weighted" to emphasize frequencies to which the ear is more sensitive, in a method known as A-weighting and expressed in units of A-weighted decibels (dBA).

⁶⁶ Traffic noise map presented on DPH website: <http://www.sfdph.org/dph/EH/Noise/default.asp>.

- Be substantially affected by existing noise levels.

A project would also normally result in a significant impact with respect to noise if it would be located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, and if the project would expose people residing or working in the area to excessive noise levels. Additionally, for a project located in the vicinity of a private airstrip, the project would normally have a significant effect if it would expose people residing or working in the project area to excessive noise levels. The project site is not within an airport land use plan area, nor is it in the vicinity of a private airstrip. Therefore, these topics are not applicable. California noise insulation standards, which are applicable only to construction of multi-family dwelling units, do not apply to this project and are not discussed.

Impact Analysis

Project-Generated Traffic Noise

Generally, traffic must double in volume to produce a noticeable increase in ambient noise levels. Based on the traffic analysis prepared for the project, traffic volumes would not double on area streets as a result of the project or as a result of cumulative traffic growth. A noise analysis prepared for the Caltrain Downtown Extension and included in the associated EIR found that there would not be significant operational noise impacts resulting from the 132 trains per day system-wide.⁶⁷ Therefore, the project would not cause a noticeable increase in the ambient noise level in the project vicinity, nor would the project contribute to any potential cumulative traffic-related noise effects.⁶⁸

Construction Noise

Impact NO-1: Project construction activity could generate noise that could be disruptive to nearby residents and occupants of commercial buildings. (Significant but Mitigable)

Demolition, excavation, and building construction would temporarily increase noise in the project vicinity. Construction equipment would generate noise and possibly vibrations that could be considered an annoyance by occupants of nearby properties.

According to the project sponsor, the construction period would last approximately 21 months. Construction noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers. Impacts would generally be limited to the period during which new foundations and exterior structural and facade elements would be constructed. Interior construction noise would be substantially reduced by the presence of exterior walls.

⁶⁷ Caltrain Downtown Extension construction from: Federal Transit Administration, City and County of San Francisco, Peninsula Corridor Joint Powers Board, and San Francisco Redevelopment Agency, *Transbay Terminal/ Caltrain Downtown Extension/Redevelopment Project Final EIS/EIR*, March 2004; Case No. 2000.048E; p. 5-69. This document is available online at: <http://www.transbaycenter.org/TransBay/content.aspx?id=114>.

⁶⁸ Environmental Science Associates, *Transportation Impact Analysis: 222 Second Street*, February 2009. Case No. 2006.1106E. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400 San Francisco, in File No. 2006.1106E.

Construction noise is regulated by the San Francisco Noise Ordinance (Article 29 of the *Police Code*), amended in November 2008. The ordinance requires that noise levels from individual pieces of construction equipment, other than impact tools, not exceed 80 dBA at a distance of 100 feet from the source. Impact tools (jackhammers, hoerammers, impact wrenches) must have both intake and exhaust mufflers as well as be equipped with acoustically attenuating shields or shrouds to the satisfaction of the Director of Public Works or the Director of Building Inspection. Section 2908 of the Ordinance prohibits construction work between 8:00 p.m. and 7:00 a.m., if noise would exceed the ambient noise level by five dBA at the project property line, unless a special permit is authorized by the Director of Public Works or the Director of Building Inspection. The project must comply with regulations set forth in the Noise Ordinance.

The closest sensitive noise receptors to the project site that have the potential to be adversely affected by construction noise are the child care facility located on the ground floor of 75 Hawthorne Street (within the project block) and the two nearest residential buildings, at 199 New Montgomery Street and 246 Second Street, each of which is within approximately 100 feet of the project site. Closed windows typically can reduce daytime interior noise levels to an acceptable level. Nevertheless, because of the proximity to these receptors, implementation of Mitigation Measure NO-1 (General Construction Noise Control Measures), p. 96, would be required to reduce construction noise to a less-than-significant level. Therefore, although construction noise could be annoying at times, with mitigation, construction noise would not be expected to exceed noise levels commonly experienced in an urban environment, and would not be considered significant.

Impact NO-2: Should pile driving be employed as part of project construction, it would generate noise and vibration that could be disruptive to nearby residents and occupants of commercial buildings. (Significant but Mitigable)

A Geotechnical Due Diligence Study conducted for the project recommended a mat foundation, which would involve excavation to a depth of 30 feet.⁶⁹ Pile driving would thus be unnecessary and the levels of noise generated by construction equipment would very likely be relatively low, compared to a building for which a pile foundation was required. Should pile driving be determined to be necessary as a result of subsequent geotechnical investigation, noise impacts could be significant. Pile driving can generate noise levels in excess of 100 dBA at 50 feet each time the hammer strikes the pile. While potentially more startling than constant noise levels, pile driving noise is intermittent, occurring only when a pile is being driven, with breaks when driving one pile is complete and another is being placed in position. In the event that pile driving is determined to be required, the project sponsor would implement Mitigation Measure NO-2 (Noise Control Measures for Pile Driving), p. 96, which would reduce potential pile-driving noise impacts to a less-than-significant level. Moreover, as noted, the project sponsor would be required to comply with measures required for impact tools in Section 2907(b) of the *Police Code*. As a result, adverse impacts from construction noise upon sensitive receptors near the project site would be reduced to a less-than-significant level.

⁶⁹ Treadwell and Rollo, *Geotechnical Due Diligence Study*, 222 2nd Street, July 16, 2006. Available for review at the Planning Department, 1650 Mission Street, Suite 400 San Francisco, in File No. 2006.1106E.

Cumulative Construction Noise

Impact NO-3: Project construction activity, along with construction from other past, present, and reasonably foreseeable future projects, could generate further disruptive noise levels. (Significant but Mitigable)

To the extent that other construction projects are proposed or undertaken in close enough proximity to the project site such that cumulative effects related to construction noise would be anticipated, noise effects would be greater or last longer, or both. The project site is about one block from the planned new Transit Center (replacement for the Transbay Terminal) and is within the vicinity of the proposed Transit Center District Plan, which could facilitate construction of several additional high-rise buildings. Additionally, the proposed underground extension of Caltrain service to the Transit Center would follow the Second Street right-of-way, and would cause additional noise and vibration impacts if it is funded and built.

Construction of the planned new Transit Center is not anticipated to begin until 2012, meaning that the proposed 222 Second Street project should be complete prior to start of work on the Transit Center. Moreover, the earlier stages of construction of a high-rise building, such as excavation and foundation construction, are typically the noisiest, as they involve heavy equipment, much of which is diesel powered. Thus, these stages of the proposed project and the Transit Center would not overlap.

While the Transit Center District Plan envisions at least half a dozen additional new buildings within about 500 feet of the project site, two of these projects—at 41 Tehama Street and at 201 Second Street (directly across the street from the project site)—have developers actively pursuing entitlements, while the others do not. The project at 201 Second Street is likely to be delayed until after construction of the Caltrain extension, should that rail project proceed, because the extension would require demolition and excavation at the 201 Second Street site. The 41 Tehama Street site is some 500 feet east of the 222 Second Street site, and the two sites are separated by the five-story building at 235 Second Street, which would substantially attenuate noise levels in the vicinity of the project from construction at the 41 Tehama Street site. Other potential projects in the Transit Center District area would be too far from the 222 Second Street site to result in substantial overlap with regard to construction noise, even if they were to proceed concurrently with the proposed project.

The construction of the proposed Caltrain Downtown Extension would temporarily introduce a new source of noise and vibration into the project area. However, funding for this project is not secured, and the likelihood of construction overlapping with that of the proposed 222 Second Street project is considered low. Additionally, construction of the extension would comply with regulations set forth in the San Francisco Noise Ordinance (Article 29 of the *Police Code*), which regulates construction noise, along with applicable project-specific noise control measures, that would reduce the potential construction noise and vibration impacts from the Caltrain project. Moreover, heavy construction activity would not likely be possible on both projects at the same time, because simultaneous excavation on the project site and excavation in the Second Street right-of-way would probably be too complex, given the potential for work at one location to adversely interfere with the other.

Finally, in the event that one or more nearby projects were to be undertaken at the same time as the proposed project, the Planning Department and the Departments of Building Inspection, Public Works, and Public Health, along with the Transbay Joint Powers Authority (sponsor of the Transit Center) and the Peninsula Joint Powers Board (sponsor of the Caltrain extension), would be expected to work to ensure that all projects comply with the San Francisco Noise Ordinance and that project construction schedules are coordinated so as to minimize, to the extent feasible, construction noise that could be disruptive.

Building Equipment Noise

The proposed project would include mechanical equipment, such as air conditioning units and chillers, which could produce operational noise. These operations would be subject to Section 2909 of the San Francisco Noise Ordinance, Article 29 of the *San Francisco Police Code*. As amended in November 2008, this section establishes a noise limit from mechanical sources, such as building equipment, specified as a certain noise level in excess of the ambient noise level at the property line: for noise generated by residential uses, the limit is 5 dBA in excess of ambient, while for noise generated by commercial and industrial uses, the limit is 8 dBA in excess of ambient and for noise on public property, including streets, the limit is 10 dBA in excess of ambient.⁷⁰ In addition, the Noise Ordinance provides for a separate fixed-source noise limit for residential interiors of 45 dBA at night and 55 dBA during the day and evening hours. Compliance with Article 29, Section 2909, would minimize noise from building operations. Therefore, operational noise would not be significant.

Effects of Existing Noise

A noise study conducted for the project indicated that the existing noise level at the project site is 75 dBA, Ldn.⁷¹ The daytime ambient noise level that is exceeded 10 percent of the time (L_{10}) is also 75 dBA. Conservatively assuming a 25 percent increase in traffic volumes on surrounding streets, the noise consultant predicted a future noise level of 76 dBA, Ldn and L_{10} . According to the noise study, a standard one-inch glass assembly (two ¼-inch glass panels with an intervening ½-inch air gap), as is commonly employed in office building construction, would result in an interior noise level of approximately 48 dBA, which is considered acceptable for an office environment.⁷² Therefore, the impact of ambient noise on the proposed project would be less than significant.

In light of the above, project effects related to operational project-generated noise and to exposure of the project to existing noise levels would be less than significant.

⁷⁰ Entertainment venues are also subject to a separate criterion for low-frequency (bass) noise.

⁷¹ As noted in the setting, based on modeled traffic volumes, the predicted traffic noise level in the project area vicinity is generally between about 65 and 70 dBA (Ldn). These results are generally consistent with those of the project-specific noise study.

⁷² Shen, Milsom, Wilke, "222 Second Street, San Francisco, California: Environmental Noise Report," November 28, 2007. This report is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1160E.

Mitigation and Improvement Measures

M-NO-1: General Construction Noise Control Measures: To ensure that project noise from construction activities is minimized to the maximum extent feasible, the project sponsor would undertake the following:

- The project sponsor would require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
- The project sponsor would require the general contractor to locate stationary noise sources (such as compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as five dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible.
- The project sponsor would require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA.
- The project sponsor would include noise control requirements in specifications provided to construction contractors. Such requirements could include, but not be limited to, performing all work in a manner that minimizes noise to the extent feasible; use of equipment with effective mufflers; undertaking the most noisy activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings inasmuch as such routes are otherwise feasible.

Implementation of the above measure would reduce construction-related noise impacts from typical construction activities to a less-than-significant level.

M-NO-2: Noise Control Measures for Pile Driving: Should pile-driving be necessary for the proposed project, the project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving.

Should pile-driving be necessary for the proposed project, the project sponsor would require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses. Any nighttime work would require a work permit from the Director of Public Works or the Director of Building Inspection pursuant to San Francisco Noise Ordinance Section 2908.

Significance After Mitigation: Less than Significant

Implementation of the above measure would reduce pile-driving noise impacts, should pile-driving be employed as part of the project, to a less-than-significant level.

M-NO-3: In addition to implementation of Mitigation Measure NO-1 (and Measure NO-2 if applicable), prior to the time that construction of the proposed project is completed, the project sponsor would cooperate with and participate in any City-sponsored construction noise control program for the Transit Center District Plan area or other City-sponsored areawide program developed to reduce potential effects of construction noise in the project vicinity. Elements of such a program could include a community liaison program to inform residents and building occupants of upcoming construction activities and, potentially, noise and/or vibration monitoring during construction activities that are anticipated to be particularly disruptive.

Significance After Mitigation: Less than Significant

Implementation of the above measure, along with implementation of Mitigation Measure NO-1 (and Measure NO-2, if applicable), would ensure that the proposed project would not contribute considerably to potential cumulative construction noise impacts, and this effect would be less than significant.

G. Air Quality

Setting

Criteria Air Pollutants

As required by the 1970 federal Clean Air Act, the United States Environmental Protection Agency (EPA) has identified six criteria air pollutants that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. EPA calls these pollutants criteria air pollutants because the agency has regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead are the six criteria air pollutants.

The BAAQMD's air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. Table 3 is a five-year summary of highest annual criteria air pollutant concentrations (2004 to 2008), collected at the BAAQMD's air quality monitoring station at 16th and Arkansas Streets, in San Francisco's lower Potrero Hill area.⁷³ Table 3 compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (state or federal).

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Table 3 shows that, according to published data, the most stringent applicable standards (state 1-hour standard of 9 parts per hundred million (pphm) and the federal 8-hour standard of 8 pphm) were not exceeded in San Francisco between 2004 and 2008.

Carbon Monoxide (CO)

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-

⁷³ Data from this single location do not describe pollutant levels throughout San Francisco, as these levels may vary depending on distance from key emissions sources and local meteorology. However, the BAAQMD monitoring network does provide a reliable picture of pollutant levels over time.

TABLE 3
SUMMARY OF SAN FRANCISCO AIR QUALITY MONITORING DATA (2004–2008)

| Pollutant | Most Stringent Applicable Standard | Number of Days Standards were Exceeded and Maximum Concentrations Measured | | | | |
|--|------------------------------------|--|------|-----------|-----------|-----------|
| | | 2004 | 2005 | 2006 | 2007 | 2008 |
| Ozone | | | | | | |
| - Days 1-hour Std. Exceeded | >9 pphm ^a | 0 | 0 | 0 | 0 | 0 |
| - Max. 1-hour Conc. (pphm) ^b | | 9 | 6 | 5 | 6 | 8 |
| - Days 8-hour Std. Exceeded | >8 pphm ^b | 0 | 0 | 0 | 0 | 0 |
| - Max. 8-hour Conc. (pphm) ^b | | 6 | 5 | 5 | 5 | 7 |
| Carbon Monoxide (CO) | | | | | | |
| - Days 8-hour Std. Exceeded | >9 ppm ^a | 0 | 0 | 0 | 0 | 0 |
| - Max. 8-hour Conc. (ppm) | | 2.2 | 2.1 | 2.1 | 1.6 | 2.3 |
| Suspended Particulates (PM₁₀) | | | | | | |
| - Days 24-hour Std. Exceeded ^c | >50 µg/m ³ ^a | 1 | 0 | 3 | 2 | 0 |
| - Max. 24-hour Conc. (µg/m ³) | | 52 | 46 | 61 | 70 | 41 |
| Suspended Particulates (PM_{2.5}) | | | | | | |
| - Days 24-hour Std. Exceeded ^d | >35 µg/m ³ ^b | 0 | 0 | 3 | 5 | 0 |
| - Max. 24-hour Conc. (µg/m ³) | | 46 | 44 | 54 | 45 | 39 |
| - Annual Average (µg/m ³) | >12 µg/m ³ ^a | 11.2 | 9.5 | 9.7 | 8.9 | 11.4 |
| Nitrogen Dioxide (NO₂) | | | | | | |
| - Days 1-hour Std. Exceeded | >25 pphm ^a | 0 | 0 | 0 | 0 | 0 |
| - Max. 1-hour Conc. (pphm) ^b | | 6 | 7 | 11 | 7 | 6 |
| Sulfur Dioxide (SO₂) | | | | | | |
| - Days 24-hour Std. Exceeded | >40 ppb ^a | 0 | 0 | 0 | 0 | 0 |
| - Max. 24-hour Conc. (ppb) ^b | | 6 | 7 | 6 | 6 | 4 |

Notes: **Bold** values are in excess of applicable standard. "NA" indicates that data is not available.
 conc. = concentration; ppm = parts per million; pphm = parts per hundred million; ppb=parts per billion;
 µg/m³ = micrograms per cubic meter
 ND = No data or insufficient data.

^a State standard, not to be exceeded.

^b Federal standard, not to be exceeded.

^c Based on a sampling schedule of one out of every six days, for a total of approximately 60 samples per year.

^d Federal standard was reduced from 65 µg/m³ to 35 µg/m³ in 2006.

SOURCE: BAAQMD, Bay Area Air Pollution Summary, 2004 – 2008. Available online at: http://www.baaqmd.gov/pio/aq_summaries/index.htm

and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table 3, no exceedances of state CO standards were recorded between 2004 and 2008. Measurements of CO indicate maximum 8-hour CO levels approximately 25 percent of the allowable 8-hour standard.

Particulate Matter (PM₁₀ and PM_{2.5})

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is measured in two size ranges: PM₁₀ for

particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facility operations, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the state Air Resources Board (ARB), studies in the United States and elsewhere "have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks," and studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children." The ARB also reports that statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.⁷⁴

Among the criteria pollutants that are regulated, particulates appear to represent a serious ongoing health hazard. As long ago as 1999, the BAAQMD was reporting, in its *CEQA Guidelines*, that studies had shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the Bay Area. High levels of particulates have also been known to exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions.⁷⁵

Table 3 shows that exceedances of the state PM_{10} standard have routinely occurred in San Francisco. It is estimated that the state 24-hour PM_{10} standard was exceeded on up to 18 days per year between 2004 and 2008.⁷⁶ The BAAQMD began monitoring $PM_{2.5}$ concentrations in San Francisco in 2002. The federal 24-hour $PM_{2.5}$ standard was not exceeded until 2006, when the standard was lowered from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$. The state annual average standard was not exceeded between 2004 and 2008.

$PM_{2.5}$ is of particular concern to the San Francisco Department of Public Health (DPH) because epidemiologic studies have demonstrated that people who live near freeways and high-traffic roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children. As a result, the City enacted Article 38 of the *San Francisco Health Code*, approved November 25, 2008, which requires that, for new residential projects of 10 or more units located in proximity to high-traffic roadways, as mapped by DPH, an Air Quality Assessment be prepared to determine whether residents would be exposed to potentially unhealthful levels of $PM_{2.5}$. Through air quality modeling, the assessment is conducted to determine if annual average concentration of $PM_{2.5}$ from the roadway sources would exceed a concentration of

⁷⁴ California Air Resources Board, "Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution," January 2004. Available on the internet at: <http://www.arb.ca.gov/research/health/fs/PM-03fs.pdf>. This document is also available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

⁷⁵ BAAQMD, *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*. December 1999; p. B-3. Available on the internet at: http://www.baaqmd.gov/pln/ceqa/ceqa_guide.pdf.

⁷⁶ PM_{10} is sampled every sixth day; therefore, actual days over the standard can be estimated to be six times the numbers listed in the table.

0.2 micrograms per cubic meter (annual average).⁷⁷ If this standard is exceeded, the project sponsor must install a filtered air supply system, with high-efficiency filters (as applicable), designed to remove at least 80 percent of ambient PM_{2.5} from habitable areas of residential units. Because the proposed 222 Second Street project would contain office and restaurant/retail uses, it would not be subject to the Article 38.

Nitrogen Dioxide (NO₂)

NO₂ is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO₂. Aside from its contribution to ozone formation, NO₂ can increase the risk of acute and chronic respiratory disease and reduce visibility. NO₂ may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. Table 3 shows that the standard for NO₂ is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet these standards for the foreseeable future.

Sulfur Dioxide (SO₂)

SO₂ is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO₂ has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease.⁷⁸ Table 3 shows that the standard for SO₂ is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet these standards for the foreseeable future.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses, cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects; children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with

⁷⁷ According to DPH, this threshold, or action level, of 0.2 micrograms per cubic meter represents about 8 – 10 percent of the range of ambient PM_{2.5} concentrations in San Francisco based on monitoring data, and is based on epidemiological research that indicates that such a concentration can result in an approximately 0.28 percent increase in non-injury mortality, or an increased mortality at a rate of approximately 20 “excess deaths” per year per one million population in San Francisco. “Excess deaths” (also referred to as premature mortality) refer to deaths that occur sooner than otherwise expected, absent the specific condition under evaluation; in this case, exposure to PM_{2.5}. (San Francisco Department of Public Health, Occupational and Environmental Health Section, Program on Health, Equity, and Sustainability, “Assessment and Mitigation of Air Pollutant Health Effects from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review, May 6, 2008. Twenty excess deaths per million based on San Francisco’s non-injury, non-homicide, non-suicide mortality rate of approximately 714 per 100,000. Although San Francisco’s population is less than one million, the presentation of excess deaths is commonly given as a rate per million population.)

⁷⁸ BAAQMD, *CEQA Guidelines* (see footnote 75, p. 100); p. B-2.

varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.⁷⁹

In addition to monitoring criteria pollutants, both the BAAQMD and the ARB operate TAC monitoring networks in the San Francisco Bay Area. These stations measure 10 to 15 TACs, depending on the specific station. The TACs selected for monitoring are those that have traditionally been found in the highest concentrations in ambient air, and therefore tend to produce the most significant risk. The BAAQMD operates an ambient TAC monitoring station at its 16th and Arkansas Streets facility in San Francisco. When TAC measurements at this station are compared to ambient concentrations of various TACs for the Bay Area as a whole, the cancer risks associated with mean TAC concentrations in San Francisco are similar to those for the Bay Area as a whole. Therefore, the estimated average lifetime cancer risk resulting from exposure to TAC concentrations monitored at the San Francisco station does not appear to be any greater than for the Bay Area as a region.

Diesel Particulate Matter

The ARB identified diesel particulate matter (DPM) as a toxic air contaminant in 1998, primarily based on evidence demonstrating cancer effects in humans.⁸⁰ The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. ARB estimated the average Bay Area cancer risk from diesel particulate, based on a population-weighted average ambient diesel particulate concentration, at about 480 in one million, as of 2000. The risk from diesel particulate matter declined from 750 in one million in 1990 to 570 in one million in 1995; by 2000, ARB estimated the average statewide cancer risk from DPM at 540 in one million.^{81,82}

⁷⁹ In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk, then the applicant is subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or more TACs.

⁸⁰ California Air Resources Board, Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines." October 1998. Available on the internet at: <http://www.arb.ca.gov/toxics/dieseltac/factsht1.pdf>. This document is also available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

⁸¹ California Air Resources Board, *California Almanac of Emissions and Air Quality - 2009 Edition*, Table 5-44 and p. 5-44. Available on the internet at: <http://www.arb.ca.gov/aqd/almanac/almanac09/pdf/chap509.pdf>. Viewed October 24, 2009.

⁸² This calculated cancer risk values from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the National Cancer Institute.

Recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. The ARB community health risk assessments and regulatory programs have produced air quality information about certain types of facilities for consideration by local authorities when siting new residences, schools, day care centers, parks and playgrounds, and medical facilities (i.e., sensitive land uses). Sensitive land uses deserve special attention because children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the non-cancer effects of air pollution. There is also substantial evidence that children are more sensitive to cancer-causing chemicals.⁸³

In 2000, the ARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. As part of the Plan, the ARB in 2008 approved a new regulation for existing heavy-duty diesel vehicles that will require retrofitting and replacement of vehicles (or their engines) over time such that by 2023, all vehicles must have a 2010 model year engine or equivalent. The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 from the 2000 risk.⁸⁴ Additional regulations apply to new trucks and to diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same soot exhaust emissions as one truck built in 1988.⁸⁵ Despite these reductions, the ARB recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses (e.g., residences, schools, day care centers, playgrounds, or medical facilities). The ARB notes that these recommendations are advisory and should not be interpreted as defined “buffer zones,” and that local agencies must balance other considerations, including housing and transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, ARB’s position is that infill development, mixed use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.⁸⁶

Greenhouse Gas Emissions

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as a driving force for global climate change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth’s climate caused by natural fluctuations and anthropogenic activities which alter the composition of the global atmosphere.

⁸³ California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005. Available on the internet at: <http://www.arb.ca.gov/ch/handbook.pdf>.

⁸⁴ California Air Resources Board, “Overview of Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles,” fact sheet, February 25, 2009; and “Facts About Truck and Bus Regulation Emissions Reductions and Health Benefits,” fact sheet, February 25, 2009, available on the internet at: <http://www.arb.ca.gov/msprog/onrdicse/d/documents.htm>. Reviewed October 24, 2009.

⁸⁵ Pollution Engineering, *New Diesel Fuel Rules Start*, website accessed on October 30, 2006: <http://www.pollutioneng.com/CDA/>.

⁸⁶ California Air Resources Board, *Air Quality and Land Use Handbook*; see footnote 83, p. 103.

Individual projects contribute to the cumulative effects of climate change by emitting GHGs during demolition, construction and operational phases. The principal GHGs are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. (Ozone—not directly emitted, but formed from other gases—in the troposphere, the lowest level of the earth’s atmosphere, also contributes to the retention of heat.) While the primary GHGs in the atmosphere are naturally occurring, carbon dioxide (CO₂), methane, and nitrous oxide are largely emitted from human activities, accelerating the rate at which these compounds occur within the earth’s atmosphere. Carbon dioxide is the “reference gas” for climate change, meaning that emissions of GHGs are typically reported in “carbon dioxide-equivalent” (CO₂-eq) measures. Emissions of carbon dioxide are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs, with much greater heat-absorption potential than carbon dioxide, include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.⁸⁷ Secondary effects are likely to include global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

The California Air Resources Board (ARB) estimated that in 2006 California produced about 485 million gross metric tons (about 535 million U.S. tons) of CO₂-eq GHG emissions.⁸⁸ The ARB found that transportation is the source of 38 percent of the State’s GHG emissions, followed by electricity generation (both in-state and out-of-state) at 22 percent and industrial sources at 20 percent. Commercial and residential fuel use (primarily for heating) accounted for 9 percent of GHG emissions.⁸⁹ In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for more than 40 percent of the Bay Area’s 102.6 million tons of GHG emissions in 2007. Industrial and commercial sources (including office and retail uses) were the second largest contributors of GHG emissions with about 34 percent of total emissions. Electricity production accounts almost 15 percent of the Bay Area’s GHG emissions, followed by domestic sources (e.g., home water heaters, furnaces, etc.) at 6.6 percent. Oil refining currently accounts for approximately 14 percent of the total Bay Area GHG emissions.⁹⁰

⁸⁷ California Air Resources Board, Climate Change website

(<http://www.arb.ca.gov/cc/ccei/meetings/120106workshop/intropres12106.pdf>). Accessed January 22, 2010.

⁸⁸ Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in “carbon dioxide-equivalents,” which present a weighted average based on each gas’s heat absorption (or “global warming”) potential.

⁸⁹ California Air Resources Board, “California Greenhouse Gas Inventory for 2000-2006— by Category as Defined in the Scoping Plan.” http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2009-03-13.pdf. Reviewed October 18, 2009.

⁹⁰ BAAQMD, *Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007*, December 2008. Available on the internet at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_003_000_000.ashx.

California has taken a leadership role in addressing the trend of increasing GHG emissions, with the passage in 2006 of California Assembly Bill 32 (AB 32), the Global Warming Solutions Act. This legislation is discussed below, under Regulatory Setting.

Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, population subgroups with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and populations with other environmental or occupational health exposures (e.g. indoor air quality) that affect cardiovascular or respiratory diseases. Land uses such as schools, children's day care centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions compared to commercial and industrial areas because people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions.⁹¹ The nearest residential buildings to the project site are at 199 New Montgomery Street and 246 Second Street, each within one-half block of the site. The nearest licensed child care center is on Hawthorne Street near Folsom Street, less than one block away.⁹² There are no schools, parks and playgrounds, hospitals, or convalescent homes in the project vicinity.

Motor vehicles are responsible for a large share of air pollution, especially in California. Epidemiologic studies have consistently demonstrated that children and adults living in proximity to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children. Vehicles also contribute to particulates by generating road dust and through tire wear.

Regulatory Setting

Air Quality Regulations and Plans

Federal Ambient Air Quality Standards

The 1970 Clean Air Act (last amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the Clean Air Act. The ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most

⁹¹ The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects. For example, poorer residents may be more likely to live in crowded substandard housing and be more likely to live near industrial or roadway sources of air pollution.

⁹² California Department of Health Services, Community Care Licensing Division, Child Care :Licensing Website search, January 16, 2010. Available on the internet at: http://www.cclcd.ca.gov/docs/celd_search/celd_search.aspx.

susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above the ambient air quality standards before adverse health effects are observed.

The current attainment status for the San Francisco Bay Area Air Basin with respect to federal standards is summarized in Table 4. In general, the Bay Area Air Basin experiences low concentrations of most pollutants when compared to federal standards, except for ozone and particulate matter (PM₁₀ and PM_{2.5}), for which standards are exceeded periodically.

In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard. The EPA lowered the national 8-hour ozone standard from 0.80 to 0.75 parts per million effective May 27, 2008. EPA will issue final designations based upon the new 0.75 ppm ozone standard by March 2010. The Bay Area Air Basin is in attainment for other criteria pollutants, with the exception of the 24-hour standards for PM₁₀ and PM_{2.5}, for which the Bay Area is designated "Unclassified."

State Ambient Air Quality Standards

Although the federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological problems in California, there is considerable diversity between the state and national ambient air quality standards, as shown in Table 4. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code Sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on state ambient air quality standards rather than the federal standards. As indicated in Table 4, the Bay Area Air Basin is designated as "nonattainment" for state ozone, PM₁₀, and PM_{2.5} standards. The Bay Area Air Basin is designated as "attainment" for most other pollutants listed in the table.

Air Quality Planning Relative to State and Federal Standards

In January 2006, the BAAQMD, in cooperation with the MTC and ABAG, adopted the *Bay Area 2005 Ozone Strategy*. The Ozone Strategy is a roadmap showing how the San Francisco Bay Area will achieve compliance with the state 1-hour ozone standard as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies, and others. The *2005 Ozone Strategy* also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the state one-hour ozone standard. In this, the *2005 Ozone Strategy* replaces the *2000 Clean Air Plan (CAP)*. Currently, the BAAQMD is developing its *2009 Clean Air Plan*.

TABLE 4
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS

| Pollutant | Averaging Time | (State) SAAQs ^a | | (Federal) NAAQs ^b | |
|--|---------------------|----------------------------|-------------------|------------------------------|-------------------|
| | | Standard | Attainment Status | Standard | Attainment Status |
| Ozone | 1 hour | 0.09 ppm | N | NA | See Note c |
| | 8 hour | 0.07 ppm | U ^d | 0.075 ppm | N/Marginal |
| Carbon Monoxide (CO) | 1 hour | 20 ppm | A | 35 ppm | A |
| | 8 hour | 9 ppm | A | 9 ppm | A |
| Nitrogen Dioxide (NO ₂) | 1 hour | 0.18 ppm | A | NA | NA |
| | Annual | NA | NA | 0.053 ppm | A |
| Sulfur Dioxide (SO ₂) | 1 hour | 0.25 ppm | A | NA | NA |
| | 24 hour | 0.04 ppm | A | 0.14 ppm | A |
| | Annual | NA | NA | 0.03 ppm | A |
| Particulate Matter (PM ₁₀) | 24 hour | 50 µg/m ³ | N | 150 µg/m ³ | U |
| | Annual ^e | 20 µg/m ^{3 f} | N | 50 µg/m ³ | A |
| Fine Particulate Matter (PM _{2.5}) | 24 hour | NA | NA | 35 µg/m ³ | U |
| | Annual | 12 µg/m ³ | N | 15 µg/m ³ | A |
| Sulfates | 24 hour | 25 µg/m ³ | A | NA | NA |
| Lead | 30 day | 1.5 µg/m ³ | A | NA | NA |
| | Cal. Quarter | NA | NA | 1.5 µg/m ³ | A |
| Hydrogen Sulfide | 1 hour | 0.03 ppm | U | NA | NA |
| Visibility-Reducing Particles | 8 hour | See Note g | A | NA | NA |

NOTES: A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter.

^a SAAQS = state ambient air quality standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

^b NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM₁₀ standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour PM_{2.5} standard is attained when the three-year average of the 98th percentile is less than the standard.

^c The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005.

^d This state 8-hour ozone standard was approved in April 2005 and became effective in May 2006.

^e State standard = annual geometric mean; national standard = annual arithmetic mean.

^f In June 2002, The California Air Resources Board (ARB) established new annual standards for PM_{2.5} and PM₁₀.

^g Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

SOURCE: Bay Area Air Quality Management District (BAAQMD), Standards and Attainment Status, May 2006. Website Accessed on October 28, 2006: http://www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm.

San Francisco General Plan Air Quality Element

The Air Quality Element of the *San Francisco General Plan* is composed of six sections, each of which focuses on different aspects of air quality improvement efforts. In general, the proposed project would be consistent with the Air Quality Element, because it would not result in violation of federal, state, or local air quality standards and would be largely consistent with the City's policy direction regarding emphasis of transit use over automobiles and energy conservation, and with the Downtown Plan's encouragement of growth near transit.

Toxic Air Contaminants

In 2005, the ARB approved a regulatory measure to reduce emissions of toxic and criteria pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than five consecutive minutes or periods aggregating more than five minutes in any one hour.⁹³ Buses or vehicles also must turn off their engines upon stopping at a school and must not turn their engines on more than 30 seconds before beginning to depart from a school. Also, state law SB351 (adopted in 2003) prohibits locating public schools within 500 feet of a freeway or busy traffic corridor.

Greenhouse Gases

Federal Actions

In December 2009, in response to a U.S. Supreme Court ruling, the federal Environmental Protection Agency (EPA) made a finding under the Clean Air Act that current and projected atmospheric concentrations of the six generally recognized GHGs—CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—"threaten the public health and welfare of current and future generations," and that emissions of these gases from new cars and trucks "contribute to the greenhouse gas pollution which threatens public health and welfare."⁹⁴ While not in itself imposing any regulatory requirements, this "endangerment finding" under the Clean Air Act is required before EPA can issue regulations, and will allow the agency to adopt GHG emissions standards that it proposed in September 2009, in conjunction with new fuel economy standards simultaneously proposed by the National Highway Traffic Safety Administration of U.S. Department of Transportation. According to EPA:

The standards proposed would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO₂) per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg) if the automotive industry were to meet this CO₂ level all through fuel economy improvements.⁹⁵

⁹³ There are 12 exceptions to this requirement (e.g., emergency situations, military, adverse weather conditions, etc.), including: when a vehicle's power takeoff is being used to run pumps, blowers, or other equipment; when a vehicle is stuck in traffic, stopped at a light, or under direction of a police officer; when a vehicle is queuing beyond 100 feet from any restricted area; or when an engine is being tested, serviced, or repaired.

⁹⁴ EPA website: <http://www.epa.gov/climatechange/endangerment.html>. Reviewed January 8, 2010.

⁹⁵ EPA, "EPA and NHTSA Propose Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks," September 2009. Available on the EPA website at: <http://www.epa.gov/oms/climate/regulations/420f09047a.htm>. Reviewed January 8, 2010.

The Department of Transportation published a Draft Environmental Impact Statement for proposed Corporate Average Fuel Economy (CAFE) Standards; the comment period closed November 9, 2009.⁹⁶

In a related action, in June 2009, EPA granted California a waiver under the federal Clean Air Act, allowing the state to impose its own, stricter GHG regulations for vehicles beginning in 2009 (see below).

Statewide Actions

As early as 2002, with the passage of Assembly Bill 1493, the California legislature directed ARB to adopt regulations to reduce greenhouse gas (GHG) emissions from cars and light trucks beginning in 2009. Because the so-called Pavley standards (named for the bill's author, current state Senator Fran Pavley) would impose stricter standards than those under the federal Clean Air Act, California applied to the EPA for a waiver under the Clean Air Act; this waiver was denied by the Bush Administration. As noted above, in 2009, EPA granted the waiver. California has now agreed to cooperate with the federal GHG and CAFE standards under development so that there will be a single national standard.

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of GHGs would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.⁹⁷

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), which requires the California Air Resources Board (ARB) to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

AB 32 establishes a timetable for the ARB to adopt emission limits, rules, and regulations designed to achieve the intent of the Act. In order to meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business as usual emissions levels, or about 10 percent from today's levels. On December 11, 2008, ARB approved a Scoping Plan to meet the 2020 GHG reduction limits outlined in AB 32. The Scoping Plan estimates a reduction of 174 million metric tons (about 191 million U.S. tons) of CO₂-eq. Approximately one-third of the emissions reductions strategies fall within the transportation sector and include the following: California Light-Duty Vehicle GHG standards, the Low Carbon Fuel Standard, Heavy-Duty Vehicle GHG emission reductions and energy efficiency, and medium and heavy-duty vehicle hybridization, high speed rail, and efficiency improvements in goods movement. These measures are expected to reduce GHG emissions by 57.3 million metric tons (63 million U.S. tons) of CO₂-eq. Emissions from the electricity sector are expected to reduce another

⁹⁶ National Highway Traffic Safety Administration, *Draft Environmental Impact Statement: Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2012-2016*. September 2009. Available on the internet at: http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated%20Files/MY2012-2016_DEIS.pdf. Reviewed January 8, 2010.

⁹⁷ California Air Resources Board, *Climate Change Scoping Plan: A Framework for Change*, December 2008. Available on the internet at: <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>. Accessed November 3, 2009.

49.7 million metric tons (55 million U.S. tons) of CO₂-eq. Reductions from the electricity sector include building and appliance energy efficiency and conservation, increased combined heat and power, solar water heating (AB 1470), the renewable energy portfolio standard (33 percent renewable energy by 2020), and the existing million solar roofs program. Other reductions are expected from industrial sources, agriculture, forestry, recycling and waste, water, and emissions reductions from cap-and-trade programs. Regional GHG targets are also expected to yield a reduction of 5 million metric tons (5.5 million U.S. tons) of CO₂-eq.⁹⁸ Measures that could become effective during project implementation pertain to construction-related equipment and building and appliance energy efficiency. Some proposed measures will require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Additionally, some emissions reductions strategies may require their own environmental review under CEQA or the National Environmental Policy Act (NEPA). Some applicable measures that are ultimately adopted will become effective during construction and operation of the proposed project and the proposed project would be subject to these requirements.

Most of the Scoping Plan's GHG reduction measures (excepting those for Agriculture, Forestry, and Industry) are set forth in Table 5. While ARB has identified a GHG reduction target of 15 percent from current levels for actions by local governments themselves, it has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions. However, the Scoping Plan does state that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. As can be seen in Table 5, many of the measures in the Scoping Plan—such as implementation of increased fuel efficiency for vehicles (the "Pavley" standards), increased efficiency in utility operations, and development of more renewable energy sources—require statewide action by government, industry, or both. Some of the measures are at least partially applicable to development projects, such as increasing energy efficiency in new construction, installation of solar panels on individual building roofs, and a "green building" strategy. The City has already implemented several of these measures that require local government action, such as implementing a Green Building Ordinance, a Zero Waste strategy, a Construction and Demolition Debris Recovery Ordinance, and a solar energy generation subsidy program, to realize meaningful reductions in GHG emissions. (See discussion under Local Actions, below.)

In addition to policy directly guided by AB 32, the legislature in 2008 passed Senate Bill (SB) 375, which provides for regional coordination in land use and transportation planning and funding to help meet the AB 32 GHG reduction goals. SB 375 requires regional transportation plans developed by the state's 18 Metropolitan Planning Organizations (in the Bay Area, the Metropolitan Transportation Commission (MTC)), to incorporate a "sustainable communities strategy" in their regional transportation plans that

⁹⁸ Ibid.

TABLE 5
GHG REDUCTION MEASURES IN ARB SCOPING PLAN¹

| Measure No. | Measure Description | GHG Reductions (Annual Million Metric Tons CO ₂ e) |
|------------------------------------|--|---|
| Transportation | | |
| T-1 | Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards | 31.7 |
| T-2 | Low Carbon Fuel Standard (Discrete Early Action) | 15 |
| T-3 ² | Regional Transportation-Related Greenhouse Gas Targets | 5 |
| T-4 | Vehicle Efficiency Measures | 4.5 |
| T-5 | Ship Electrification at Ports (Discrete Early Action) | 0.2 |
| T-6 | Goods Movement Efficiency Measures. • Ship Electrification at Ports • System-Wide Efficiency Improvements | 3.5 |
| T-7 | Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action) | 0.93 |
| T-8 | Medium- and Heavy-Duty Vehicle Hybridization | 0.5 |
| T-9 | High Speed Rail | 1 |
| Electricity and Natural Gas | | |
| E-1 | Energy Efficiency (32,000 GWh of Reduced Demand) • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs | 15.2 |
| E-2 | Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss) | 6.7 |
| E-3 | Renewables Portfolio Standard (33% by 2020) | 21.3 |
| E-4 | Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) • Target of 3000 MW Total Installation by 2020 | 2.1 |
| CR-1 | Energy Efficiency (800 Million Therms Reduced Consumptions) • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs | 4.3 |
| CR-2 | Solar Water Heating (AB 1470 goal) | 0.1 |
| Green Buildings | | |
| GB-1 | Green Buildings | 26 |
| Recycling and Waste | | |
| RW-1 | Landfill Methane Control (Discrete Early Action) | 1 |
| RW-2 | Additional Reductions in Landfill Methane | TBD† |
| RW-3 | High Recycling/Zero Waste | TBD† |
| Water | | |
| W-1 | Water Use Efficiency | 1.4† |
| W-2 | Water Recycling | 0.3† |
| W-3 | Water System Energy Efficiency | 2.0† |
| W-4 | Reuse Urban Runoff | 0.2† |
| W-5 | Increase Renewable Energy Production | 0.9† |
| W-6 | Public Goods Charge (Water) | TBD† |

¹ Table excludes GHG reduction measures for Agriculture, Forestry, and Industry (including high-global warming potential gases).

² This is not the SB 375 regional target. ARB will establish regional targets for each Metropolitan Planning Organization (MPO) region following the input of the regional targets advisory committee and a consultation process with MPOs and other stakeholders per SB 375.

† GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target.

SOURCE: ARB, 2008e.

will achieve GHG emission reduction targets set by ARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. MTC's 2013 RTP will be its first plan subject to SB 375.

SB 375 requires ARB to establish regional GHG reduction targets for GHGs. ARB appointed a 21-member Regional Targets Advisory Committee to recommend factors to be considered and methodologies used in setting the regional goals; this committee provided its recommendations to ARB in September 2009.

Local Actions

San Francisco has a history of environmental protection policies and programs aimed at improving the quality of life for San Francisco's residents and reducing impacts on the environment. The following plans, policies and legislation demonstrate San Francisco's continued commitment to environmental protection.

Transit First Policy. In 1973 San Francisco instituted the Transit First Policy which added Section 16.102 to the City Charter with the goal of reducing the City's reliance on freeways and meeting transportation needs by emphasizing mass transportation. The Transit First Policy gives priority to public transit investments; adopts street capacity and parking policies to discourage increased automobile traffic; and encourages the use of transit, bicycling and walking rather than use of single-occupant vehicles.

San Francisco Sustainability Plan. In July 1997 the Board of Supervisors approved the Sustainability Plan for the City of San Francisco establishing sustainable development as a fundamental goal of municipal public policy.

The Electricity Resource Plan (Revised December 2002). San Francisco adopted the Electricity Resource Plan to help address growing environmental health concerns in San Francisco's southeast community, home of two power plants. The plan presents a framework for assuring a reliable, affordable, and renewable source of energy for the future of San Francisco.

The Climate Action Plan for San Francisco. In February 2002, the San Francisco Board of Supervisors passed the Greenhouse Gas Emissions Reduction Resolution (Number 158-02) committing the City and County of San Francisco to a GHG emissions reduction goal of 20 percent below 1990 levels by the year 2012. In September 2004, the San Francisco Department of the Environment and the Public Utilities Commission published the Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Emissions.⁹⁹ The Climate Action Plan provides the context of climate change in San Francisco and examines strategies to meet the 20 percent GHG reduction target. Although the Board of Supervisors has not formally committed the City to perform the actions addressed in the Plan, and many of the actions require further development and commitment of resources, the Plan serves as a blueprint for GHG emission reductions, and several actions have been implemented or are now in progress.

⁹⁹ San Francisco Department of the Environment and San Francisco Public Utilities Commission, Climate Action Plan for San Francisco, Local Actions to Reduce Greenhouse Emissions, September 2004.

For example, because transportation-related emissions represent half of citywide (and regional) GHG emissions, the Climate Action Plan calls for shifting travel from private automobiles to transit, bicycling, and walking. As noted above, the City has had a Transit First Policy for more than 35 years. Because reducing the availability and increasing the cost of parking can help reduce driving (assuming that alternative travel means are available), parking has been limited in downtown buildings since the Downtown Plan and accompanying rezoning were approved in 1985 with a limit on the amount of parking in both commercial and residential buildings and no required parking. More recently, the City has eliminated required parking in residential buildings downtown and in Rincon Hill and placed limits on the amount of parking that can be provided, and these parking limitations were subsequently expanded to Neighborhood Commercial-Transit (NCT) use districts, mixed-use districts in the Eastern Neighborhoods, and senior and affordable housing units except in the lowest-density residential use districts. Moreover, both the Better Neighborhoods Program (Market & Octavia, Balboa Park, and Central Waterfront Plans) and the Eastern Neighborhoods Rezoning have added to the areas of the City zoned for reduced parking. And in 2009, the City adopted a new Bicycle Plan that calls for an extensive expansion of bicycle lanes, bike parking, and other facilities in an effort to further encourage bicycle use in San Francisco. In the area of energy, the City in 2008 adopted a Green Building Ordinance and a rebate program to reduce the cost to homeowners and businesses of solar power installations. And in the area of solid waste, the City has implemented a number of programs to reduce GHG generation both by reducing the amount of virgin materials used in manufacturing and curtailing the amount of GHG (methane) generated at landfills. (These programs are described further below.)

San Francisco Municipal Transportation Agency's Zero Emissions 2020 Plan. The SFMTA's Zero Emissions 2020 plan focuses on the purchase of cleaner transit buses including hybrid diesel-electric buses. Under this plan hybrid buses will replace the oldest diesel buses, some dating back to 1988. The hybrid buses emit 95 percent less particulate matter (PM, or soot) than the buses they replace, they produce 40 percent less oxides of nitrogen (NO_x), and they reduce GHGs by 30 percent.

LEED® Silver for Municipal Buildings. In 2004, the City amended Chapter 7 of the Environment code, requiring all new municipal construction and major renovation projects to achieve LEED® Silver Certification from the US Green Building Council.

Zero Waste. In 2004, the City of San Francisco committed to a goal of diverting 75 percent of its waste from landfills by 2010, with the ultimate goal of zero waste by 2020. San Francisco currently recovers 69 percent of discarded material.

Construction and Demolition Debris Recovery Ordinance. In 2006 the City of San Francisco adopted Ordinance No. 27-06, requiring all construction and demolition debris to be transported to a registered facility that can divert a minimum of 65 percent of the material from landfills. This ordinance applies to all construction, demolition and remodeling projects within the City.

Greenhouse Gas Reduction Ordinance. In May 2008, the City of San Francisco adopted an ordinance amending the San Francisco Environment Code to establish City GHG emission targets and departmental action plans, to authorize the Department of the Environment to coordinate efforts to meet these targets,

and to make environmental findings. The ordinance establishes the following GHG emission reduction limits for San Francisco and the target dates to achieve them:

- Determine 1990 City GHG emissions by 2008, the baseline level with reference to which target reductions are set;
- Reduce GHG emissions by 25 percent below 1990 levels by 2017;
- Reduce GHG emissions by 40 percent below 1990 levels by 2025; and
- Reduce GHG emissions by 80 percent below 1990 levels by 2050.

The ordinance also specifies requirements for City departments to prepare departmental Climate Action Plans that assess, and report to the Department of the Environment, GHG emissions associated with their department's activities and activities regulated by them, and prepare recommendations to reduce emissions. As part of this, the San Francisco Planning Department is required to: (1) update and amend the City's applicable *General Plan* elements to include the emissions reduction limits set forth in this ordinance and policies to achieve those targets; (2) consider a project's impact on the City's GHG reduction limits specified in this ordinance as part of its review under CEQA; and (3) work with other City departments to enhance the "transit first" policy to encourage a shift to sustainable modes of transportation thereby reducing emissions and helping to achieve the targets set forth by this ordinance.

Go Solar SF. On July 1, 2008, the San Francisco Public Utilities Commission (SFPUC) launched their "GoSolarSF" program to San Francisco's businesses and residents, offering incentives in the form of a rebate program that could pay for approximately half the cost of installation of a solar power system, and more to those qualifying as low-income residents.

City of San Francisco's Green Building Ordinance. On August 4, 2008, Mayor Gavin Newsom signed into law San Francisco's Green Building Ordinance for newly constructed residential and commercial buildings and renovations to existing buildings. The ordinance specifically requires newly constructed commercial buildings over 5,000 square feet (sq. ft.), residential buildings over 75 feet in height, and renovations on buildings over 25,000 sq. ft. to be subject to an unprecedented level of LEED® and green building certifications, which makes San Francisco the city with the most stringent green building requirements in the nation. Cumulative benefits of this ordinance include reducing CO₂ emissions by 60,000 tons, saving 220,000 megawatt hours of power, saving 100 million gallons of drinking water, reducing waste and storm water by 90 million gallons of water, reducing construction and demolition waste by 700 million pounds, increasing the valuations of recycled materials by \$200 million, reducing automobile trips by 540,000, and increasing green power generation by 37,000 megawatt hours.¹⁰⁰

The Green Building Ordinance also continues San Francisco's efforts to reduce the City's greenhouse gas emissions to 20 percent below 1990 levels by the year 2012, a goal outlined in the City's 2004 Climate Action Plan. In addition, by reducing San Francisco's emissions, this ordinance also furthers the State's efforts to reduce greenhouse gas emissions statewide as mandated by the California Global Warming Solutions Act of 2006.

¹⁰⁰ These findings are contained within the final Green Building Ordinance, signed by the Mayor August 4, 2008.

The City has also passed ordinances to reduce waste from retail and commercial operations and to require recycling and composting in residential and commercial buildings. Ordinance 295-06, the Food Waste Reduction Ordinance, prohibits the use of polystyrene foam disposable food service ware and requires biodegradable/compostable or recyclable food service ware by restaurants, retail food vendors, City Departments and City contractors. Ordinance 81-07, the Plastic Bag Reduction Ordinance, requires many stores located within the City and County of San Francisco to use compostable plastic, recyclable paper and/or reusable checkout bags. Ordinance 100-09, the Mandatory Recycling and Composting Ordinance, requires everyone in San Francisco to separate their refuse into recyclables, compostables, and trash.

The San Francisco Planning Department and Department of Building Inspection have also developed a streamlining process for Solar Photovoltaic (PV) Permits and priority permitting mechanisms for projects pursuing LEED® Gold Certification.

The City's *Planning Code* reflects the latest smart growth policies and includes: electric vehicle refueling stations in city parking garages, bicycle storage facilities for commercial and office buildings, and zoning that is supportive of high density mixed-use infill development. The City's more recent area plans, such as Rincon Hill and the Market and Octavia Area Plan, provide transit-oriented development policies. At the same time there is also a community-wide focus on ensuring San Francisco's neighborhoods as "livable" neighborhoods, including the Transit Effectiveness Plan and the Bicycle Plan, all of which promote alternative transportation options. And the *San Francisco Environment Code* (Sec. 421) requires employers of 20 or more to provide employees with transit benefits, such as a Muni Fast Pass, Commuter Check, or similar financial support.

Each of the policies and ordinances discussed above include measures that would decrease the amount of GHGs emitted into the atmosphere and decrease San Francisco's overall contribution to climate change.

The Bay Area Air Quality Management District (BAAQMD), in the draft 2009 update of its *CEQA Guidelines*, has outlined the features that are required for a Climate Action Plan to be considered consistent with the State's GHG reduction goals as codified through AB 32. Projects that are consistent with such "qualified Climate Action Plans" can be found to have a less-than-significant impact in terms of GHG emissions and climate change. BAAQMD standards for a qualified Climate Action Plan (CAP) include a GHG inventory for existing years and 2020 (as well as 1990 if relevant to reduction targets); an adopted GHG reduction goal of (a) 1990 GHG emission levels, (b) 15 percent below 2008 emission levels, or (c) 28 percent below a 2020 "business as usual" forecast; identification of feasible reduction measures to meet the identified target; application of relevant reduction measures included in the AB 32 Scoping Plan to the local jurisdiction; quantification of each measure's effectiveness in GHG reduction; identification of implementation steps and financing mechanisms; interim monitoring procedures; and identification of responsible parties and a schedule for implementation. In addition, a qualified CAP must have undergone CEQA review. Because few local agencies have completed all of these steps, BAAQMD recognizes that a local agency can demonstrate equivalency with a qualified CAP if its climate change ordinances, policies, and programs are consistent with AB 32 and include requirements or feasible measures to reduce GHG emissions to 1990 levels, 15 percent below 2008 levels, or 28 percent below a 2020 "business as usual" forecast.

Given the City's adopted ordinances, policies, and programs, and the fact that the City's CAP calls for a reduction in GHG emissions to 20 percent below 1990 levels by the year 2012, the Climate Action Plan for San Francisco is likely to be considered a "qualified Climate Action Plan" as defined by the BAAQMD.

Project Design Features to Minimize Emissions, Including GHGs

The proposed project would be required to comply with the local ordinances and regulations discussed above, including the Green Building Ordinance and Mandatory Recycling and Composting Ordinance and employer provision of transit benefits to employees, as well as the *Planning Code* limitation on the amount of on-site parking and *Planning Code* requirements for the provision of bicycle parking and showers and lockers; transportation management and transportation brokerage services; and planting of street trees; as well as transit development impact fees under Article 38 of the *Administrative Code*. In addition, as noted in the Project Description, the project is proposed for LEED Gold (Version 2.2) certification, which would reduce energy consumption and water use (and thereby reduce emissions from electricity production and consumption of natural gas for heating) to levels below what would otherwise be used with traditional construction.

Impacts

Significance Criteria

The proposed project would have a significant air quality impact if it were to:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people;
- Conflict with San Francisco's Climate Action Plan such that it would impede implementation of the local GHG reduction goals established by San Francisco's Greenhouse Gas Reduction Ordinance; or
- Conflict with the state goal of reducing GHG emissions in California to 1990 levels by 2020, as set forth by the timetable established in AB 32 (California Global Warming Solutions Act of 2006), such that the project's GHG emissions would result in a substantial contribution to global climate change.

For project-level impact analysis, the BAAQMD recommends various thresholds and tests of significance. For ROG, NO_x and PM₁₀, a net increase of 80 pounds per day is considered significant, while for CO, an increase would be considered significant if it leads to or contributes to CO concentrations exceeding the State Ambient Air Quality Standard. Generally, if a project results in an increase in ROG, NO_x, or PM₁₀ of more than 80 pounds per day, then it would also be considered to

contribute considerably to a significant cumulative effect. For projects that would not lead to a significant increase of ROG, NO_x, or PM₁₀ emissions, the cumulative effect is evaluated based on a determination of the consistency of the project with the current regional Clean Air Plan, the *Bay Area 2005 Ozone Strategy*.

As of January 2010, BAAQMD is preparing an update to its *CEQA Guidelines*. The District board held public hearings in November and December 2009 and January 2010, and is tentatively scheduled to adopt the updated *Guidelines* in April 2010. Although not yet adopted, the proposed *Guidelines* are discussed in this EIR for informational purposes.

Under the proposed *BAAQMD CEQA Guidelines* published December 2009,¹⁰¹ the significance thresholds for criteria pollutants would be adjusted as follows: for exhaust emissions of ROG, NO_x and PM_{2.5}, a net increase of 54 pounds per day would be considered significant, while for PM₁₀, a net increase of 82 pounds per day would be considered significant. For CO, an increase would be considered significant if it leads to or contributes to CO concentrations exceeding the State Ambient Air Quality Standard, although quantification would not be required if a project is consistent with the local congestion management program and plans and traffic volumes at affected intersections are below 24,000 vehicles per hour.

Methodology

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to project operation. First, during project construction, the project would affect local particulate concentrations primarily due to fugitive dust sources, as well as construction equipment exhaust. Over the long term, the project would result in an increase in emissions primarily due to increased motor vehicle trips. On-site stationary sources (such as natural gas boilers for water and space heating) and area sources (such as landscaping and use of consumer products) would result in lesser quantities of pollutant emissions.

For construction phase impacts, BAAQMD does not currently require quantification of construction emissions, but recommends that significance be based on a consideration of the control measures to be implemented.¹⁰²

Operational emissions of criteria air pollutants were estimated using the URBEMIS 2007 model (version 9.2.4) for the expected project buildout and compared to BAAQMD significance thresholds. The model combines information on trip generation with vehicular emissions data specific to different types of trips in the San Francisco area (home-to-work, work-other, etc.) from the ARB's EMFAC 2007 BURDEN

¹⁰¹ BAAQMD, *California Environmental Quality Act (CEQA) Air Quality Guidelines*, draft, December 2009. Available on the internet at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Draft%20BAAQMD%20CEQA%20Guidelines_Dec%207%202009.ashx.

¹⁰² BAAQMD, *CEQA Guidelines* (see footnote 75, p. 100). The BAAQMD's draft revised Guidelines (footnote 101) recommend quantitative thresholds for construction exhaust emissions but qualitative analysis for emissions of dust, which is to be managed through appropriate control measures.

model to create an estimated daily emissions burden for travel within the San Francisco Bay Area Air Basin. The resulting quantification is compared against the BAAQMD's recommended thresholds.

For greenhouse gas (GHG) emissions, quantification is undertaken using a combination of the URBEMIS 2007 model and other emissions factors.

Localized CO concentrations near congested intersections were analyzed using a screening model based on Caltrans' CALINE4 program. The BAAQMD recommends evaluation of localized carbon monoxide concentrations for projects in which: 1) vehicle emissions of CO would exceed 550 pounds per day; 2) project traffic would affect intersections or roadway links operating at Level of Service (LOS) D, E or F or would cause LOS to decline to D, E or F; or 3) project traffic would increase traffic volumes on nearby roadways by 10 percent or more. The proposed project would neither result in CO emissions in excess of 550 pounds per day, nor would it increase traffic volumes on nearby roadways by 10 percent or more. However, the project would affect three study intersections that currently operate at LOS E or F in the p.m. peak hour, as well as four that operate at LOS D, and therefore a separate CO analysis was undertaken.

Impact Analysis

The proposed project would include office and restaurant/retail uses not typically associated with noxious odors. Although restaurant space could include one or more ventilation fans, the nearest sensitive receptors are nearly 200 feet from the proposed restaurant/retail space. Therefore, the project would not create objectionable odors affecting a substantial number of people, and odors are not discussed further in this section.

Construction Air Quality Impacts

Impact AQ-1: Project construction would not conflict with air quality plans, violate air quality standards, or expose sensitive receptors to substantial pollutant concentrations, either individually or cumulatively. (Less than Significant)

Demolition, grading and new construction activities would temporarily affect local air quality during the project's proposed 21-month construction schedule, causing temporary increases in particulate dust and other pollutants. Emissions generated from construction activities include dust (including PM₁₀ and PM_{2.5})¹⁰³ primarily from "fugitive" sources, combustion emissions of criteria air pollutants (reactive organic gases [ROG], nitrogen oxides [NOx], carbon monoxide [CO], sulfur oxides [SOx], and PM₁₀ and PM_{2.5}) primarily from operation of construction equipment and worker vehicles, and evaporative emissions (ROG) from asphalt paving and architectural coating applications.

For fugitive dust, the BAAQMD recommends a "best management practices" approach for dust control. Project-related demolition, excavation, grading and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Although there are federal

¹⁰³ Particles that are 10 microns or less in diameter and 2.5 microns or less in diameter, respectively.

standards for air pollutants and implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the California Air Resources Board, reducing ambient particulate matter from 1998 – 2000 levels to natural background concentrations in San Francisco would prevent over 200 premature deaths.

Dust can be an irritant causing watering eyes or irritation to the lungs, nose and throat. Demolition, excavation, grading and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

In response, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes generally referred hereto as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and to avoid orders to stop work by the Department of Building Inspection (DBI).

The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites less than one half-acre that are unlikely to result in any visible wind-blown dust.

The project sponsor and the contractor responsible for construction activities at the project site shall use the following practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the Director of DBI. Dust suppression activities may include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the *San Francisco Public Works Code*. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing, and/or earth movement. During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 millimeter (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques.

For project sites greater than one half-acre in size, such as the proposed 222 Second Street project, the Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Health Department. DBI will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement. Interior-only tenant improvements, even if over one-half acre, that will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement.

Site-specific Dust Control Plans shall require the project sponsor to: submit a map to the Director of Public Health showing all sensitive receptors within 1000 feet of the site; wet down areas of soil at least three times per day; provide an analysis of wind direction and install upwind and downwind particulate dust monitors; record particulate monitoring results; hire an independent, third party to conduct inspections and keep a record of those inspections; establish shut-down conditions based on wind, soil migration, etc.; establish a hotline for surrounding community members who may be potentially affected by project-related dust; limit the area subject to construction activities at any one time; install dust curtains and windbreaks on the property lines, as necessary; limit the amount of soil in hauling trucks to the size of the truck bed and securing with a tarpaulin; enforce a 15 mph speed limit for vehicles entering and exiting construction areas; sweep affected streets with water sweepers at the end of the day; install and utilize wheel washers to clean truck tires; terminate construction activities when winds exceed 25 miles per hour; apply soil stabilizers to inactive areas; and sweep adjacent streets to reduce particulate emissions. The project sponsor would be required to designate an individual to monitor compliance with dust control requirements.

These regulations and procedures set forth by the San Francisco Building Code would ensure that potential dust-related air quality impacts would be reduced to a level of insignificance.

The BAAQMD neither recommends quantified analysis of cumulative construction emissions nor provides thresholds of significance that could be used to assess cumulative construction emissions. The construction industry, in general, is an existing source of emissions within the Bay Area. Construction equipment operates at one site on a short-term basis and, when finished, moves on to a new construction site. Because construction activities would be temporary, the contribution to the cumulative context is so small as to be virtually immeasurable, and as all of the appropriate and feasible construction-related measures recommended by the BAAQMD would be implemented, and the contribution of construction emissions associated with the proposed project would not be cumulatively considerable.

Regional Air Quality Impacts

Impact AQ-2: Project operation would not conflict with air quality plans, violate air quality standards, or expose sensitive receptors to substantial pollutant concentrations with respect to regional pollutants, either individually or cumulatively. (Less than Significant)

As shown in Table 6, emission increases attributable to the proposed project would be substantially below the significance thresholds established by the BAAQMD. Therefore, the project's regional effects of criteria pollutant emissions would be less than significant.

TABLE 6
ESTIMATED DAILY REGIONAL EMISSIONS (2012)

| | Projected Emissions (Pounds per Day) ^{1,2} | | | | | |
|---|---|-----------------|------------------|-----------------|------------------|-------------------|
| | ROG | NO _x | CO | SO _x | PM ₁₀ | PM _{2.5} |
| Project Stationary-Source Emissions | 3 | 3 | 4 | 0 | 0 | 0 |
| Project Mobile-Source (Vehicle) Emissions | 20 | 19 | 178 | 0 | 29 | 6 |
| TOTAL | 20 | 19 | 182 | 0 | 29 | 6 |
| BAAQMD Threshold (existing) | 80 | 80 | 550 ³ | 80 | 80 | 80 |
| Proposed BAAQMD Threshold | 54 | 54 | — | — | 82 | 54 |

NOTES:

¹ Emission factors were generated by the URBEMIS 2007 (v. 9.2.4) model for San Francisco County, and assume a default vehicle mix. All daily estimates are the average of summer and winter conditions.

² Columns may not total due to rounding.

³ When this threshold is exceeded, a detailed CO analysis is required. See Table 7 for CO analysis.

SOURCE: Environmental Science Associates, 2009.

In terms of cumulative air quality effects, the proposed project would be generally consistent with the *San Francisco General Plan*, which does not project a population increase in excess of that forecast in the *Bay Area 2005 Ozone Strategy*. Additionally, the *General Plan*, *Planning Code*, and *City Charter* implement various Transportation Control Measures identified in the *2005 Ozone Strategy* through the City's Transit First Program, bicycle parking requirements, transit development impact fees applicable to commercial uses, and other actions. In light of the above, the project would not contribute considerably to cumulative air quality impacts, nor would it interfere with implementation of the *2005 Ozone Strategy* or the *2001 Ozone Attainment Plan*, which are the applicable regional air quality plans developed to improve air quality towards attaining the state and federal ambient air quality standards, respectively. Although the BAAQMD screening threshold for CO of 550 pounds per day would not be exceeded, the project would contribute traffic to intersections that would operate at unacceptable levels of service. Therefore, a detailed CO analysis was conducted at three study intersections where traffic volumes would be greatest (see Table 7 and impact discussion below).

Local Air Quality Impacts

Impact AQ-3: Project operation would not conflict with air quality plans, violate air quality standards, or expose sensitive receptors to substantial pollutant concentrations with respect to local pollutants, either individually or cumulatively. (Less than Significant)

Carbon Monoxide

As noted, three of the study intersections operate at LOS E or F in the p.m. peak hour under existing conditions: Fourth/Harrison Streets and Second/Harrison Streets (both LOS E), and First/Harrison Streets (LOS F). Additionally, the intersections of Hawthorne/Folsom Streets, Second/Folsom Streets, New Montgomery/Howard Streets, and Third/Mission Streets operate at LOS D.

TABLE 7
ESTIMATED EXISTING AND FUTURE CO CONCENTRATIONS AT SELECTED INTERSECTIONS

| Intersection | Averaging Time (hrs.) | Standard (ppm) | Concentrations (ppm) ¹ | | |
|---|-----------------------|----------------|-----------------------------------|-----------------------|-----------------|
| | | | Existing | Existing plus Project | 2025 Cumulative |
| Second Street / Folsom Street (PM Peak Hour) | 1 | 20 | 4.5 | 5.1 | 3.3 |
| | 8 | 9 | 3.3 | 4.0 | 2.4 |
| Second Street / Harrison Street (PM Peak Hour) | 1 | 20 | 4.8 | 5.3 | 3.4 |
| | 8 | 9 | 3.6 | 4.1 | 2.5 |
| Fourth Street / Harrison Street (PM Peak Hour) | 1 | 20 | 5.3 | 5.4 | 3.3 |
| | 8 | 9 | 3.9 | 3.9 | 2.5 |

¹ Concentrations relate to a location at the edge of the roadways that form the intersection. The carbon monoxide analysis focuses on the weekday afternoon (p.m.) peak-hour because the project's effects on traffic congestion and related carbon monoxide concentrations are greatest during those periods. The BAAQMD manual CO screening model was used to develop these estimates based on peak-hour traffic volumes prepared for this report. One-hour-average concentrations include background values of 2.9 parts per million (ppm) for 2009 and 2013 (estimated date of project completion), and 1.8 ppm in 2025, and eight-hour average concentrations include background values of 2.2 ppm in 2009 and 2013, and 1.1 ppm in 2025.

SOURCE: Environmental Science Associates, 2009.

Of the intersections where existing operations are unacceptable (LOS E or F), project traffic would add 124 peak-hour vehicles to Second/Harrison Streets, 43 to First/Harrison, and 39 to Fourth/Harrison. The project would add 10 vehicles to Hawthorne/Folsom Streets, 148 vehicles to the intersection of Second/Folsom Streets, 81 vehicles to New Montgomery/Howard Streets, and 37 vehicles to Third/Mission Streets. Of these intersections, Second/Folsom Streets would see a deterioration in LOS (D to E) due to project traffic and would see the greatest increase in traffic due to the proposed project. Second/Harrison Streets would also be adversely affected by a substantial increase in project traffic and would have the greatest overall traffic volume. Accordingly, a detailed CO impact analysis was conducted at these two intersections, as well as the Fourth/Harrison Streets intersection, which has the greatest existing volumes, to determine whether the project would result in an adverse impact. A BAAQMD screening approach, which is based on the CALINE4 model, was used to estimate CO concentrations along these roadway links. CO concentrations were calculated at the edge of each roadway to determine potential impacts based on worst-case conditions (peak hour traffic and theoretical minimum atmospheric mixing).

Significance of localized CO emissions from mobile sources is determined by modeling the ambient CO concentration under project (2009) and future cumulative (2025) conditions, and comparing the resulting one-hour and eight-hour concentrations to the respective state and federal CO standards. This comparison is presented in Table 7. The analysis indicates that the state and federal one-hour and eight-hour standards for CO would not be violated at study intersections during worst-case atmospheric conditions (wintertime conditions when CO concentrations are typically greatest). Modeling results indicate that CO concentrations will decrease in the future due to attrition of older, high polluting vehicles, improvements in the overall automobile fleet, and improved fuel mixtures (as a result of

ongoing state and federal emissions standards and programs for on-road motor vehicles). Therefore, the proposed project would have a less-than-significant impact on local air quality.

Diesel Particulate Matter Exposure, PM_{2.5}, and Health Effects

As noted in the setting, diesel particulate matter (DPM) is a toxic air contaminant and the ARB recommends that proximity to sources of DPM emissions be considered in the siting of new development. Among other things, ARB advises that new sensitive land uses (e.g., residences, schools, daycare centers, playgrounds, or medical facilities) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day. The San Francisco Department of Public Health likewise recommends air quality modeling for sensitive land uses in such circumstances. The proposed project would not include any such sensitive land uses, and because the proposed project would develop office and restaurant/retail uses, which are not considered sensitive receptors, the project would not result in adverse effects with regard to generating increased exposure of sensitive receptors to DPM or PM_{2.5}.

Greenhouse Gas Emissions

Impact AQ-4: Project operation would not conflict with air quality planning concerning reduction of greenhouse gas emissions. (Less than Significant)

In its proposed *CEQA Guidelines* (December 2009), the BAAQMD recommends that the determination of the significance of a project's contribution to climate change be evaluated by comparing the project to the applicable jurisdiction's Climate Action Plan or equivalent policy framework; where the project is found consistent, the project would have a less-than-significant impact. In the absence of such a conclusion, the BAAQMD recommends a quantitative threshold of 1,100 metric tons per year or a "service population" (residents plus employees) threshold of 4.6 metric tons per year per person.¹⁰⁴

This evaluation relies on the proposed BAAQMD approach to determining significance, and also follows the GHG analysis guidelines set forth in a Technical Advisory provided in 2008 by the Governor's Office of Planning and Research (OPR), which recommends the following three steps be followed in analyzing GHG emissions:

- 1) Identify and quantify the project's GHG emissions;
- 2) Assess the significance of the impact on climate change; and
- 3) If the impact is found to be significant, identify alternatives and/ or mitigation measures that would reduce the impact to a less-than-significant level.

It is noted that the State CEQA Guidelines have been revised to provide general direction with regard to analysis of GHG emissions.¹⁰⁵ These revisions include a new section (Sec. 15064.4) specifically

¹⁰⁴ BAAQMD, draft CEQA Guidelines, December 2009 (see footnote 101, p. 117).

¹⁰⁵ The California Natural Resources Agency issued a final version of the revised CEQA Guidelines on December 30, 2009. The new Guidelines will not become effective until reviewed by the state Office of Administrative Law, which is anticipated to approve the revised Guidelines for incorporation by the Secretary of State into the California Code of Regulations in April 2010.

addressing the significance of GHG emissions. Section 15064.4 calls for a “good-faith effort” to “describe, calculate or estimate” GHG emissions; Section 15064.4 further states that the significance of GHG impacts should include consideration of the extent to which the project would increase or reduce greenhouse gas emissions; exceed a locally applicable threshold of significance; and comply with “regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.” The revisions also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Sec. 15064(h)(3)).

The revised guidelines, however, do not require or recommend an analysis methodology or a test for determining significance. Therefore, the following analysis is based on OPR’s recommended approach for determining a project’s contribution to and impact on climate change, as presented in the 2008 Technical Advisory, and relying, in part, on the BAAQMD’s proposed significance criteria.

Step 1: Identifying and quantifying a project’s greenhouse gas emissions. OPR’s Technical Advisory states that “the most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide.” State law defines GHG to also include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (added in 2009). These latter GHG compounds are usually emitted in industrial processes, and therefore are not applicable to the proposed project. However, the GHG calculation does include emissions from CO₂, nitrous oxide, and methane, as recommended by OPR. The informal guidelines also advise that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water usage and construction activities. The calculation presented below includes CO₂-eq GHG emissions from the construction period, as well as annual CO₂-eq GHG emissions from increased vehicular traffic and energy consumption, including both natural gas and electricity. While San Francisco’s population and businesses are expected to increase, overall projected water demand for San Francisco in 2030 is expected to decrease from current water demand due to improvements in plumbing code requirements and additional water conservation measures implemented by the San Francisco Public Utilities Commission (SFPUC).¹⁰⁶ Given the anticipated degree of water conservation, GHG emissions associated with the transport and treatment of water usage would similarly decrease through 2030, and therefore increased GHG emissions from water usage is not expected.

The proposed project would increase the activity onsite by developing a new 26-story building containing about 448,000 total square feet of office space and 4,600 square feet of ground-floor restaurant space. Therefore, the proposed project would contribute to annual long-term increases in GHGs as a result of traffic increases (mobile sources) and residential and commercial operations associated with heating, energy use, water usage and wastewater treatment, and solid waste disposal (area sources). Construction

¹⁰⁶ The San Francisco Public Utilities Commission’s (SFPUC) City and County of San Francisco Retail Water Demands and Conservation Potential, November 2004, documents the current and projected water demand given population and housing projections from Citywide Planning. This document is available at the SFPUC’s website at: http://sfwater.org/detail.cfm/MC_ID/13/MSC_ID/165/C_ID/2281. Accessed July 28, 2008. The analysis provides projections of future (2030) water demand given anticipated water conservation measures from plumbing code changes, measures the SFPUC currently implements, and other measures the SFPUC anticipates on implementing. Conservation measures the SFPUC currently implements results in an overall reduction of 0.64 million gallons of water per day (mgd).

of the proposed project would emit approximately 486 metric tons (535 U.S. tons) of CO₂-eq.¹⁰⁷ Direct project CO₂-eq emissions (including CO₂, methane, and nitrous oxide emissions) would include 2,690 metric tons (2,960 U.S. tons) of CO₂-eq/year from transportation and 605 metric tons (665 U.S. tons) of CO₂-eq/year from heating, for a total of 3,295 metric tons (3,625 U.S. tons) of CO₂-eq/year of project-emitted GHGs. The project would also indirectly result in GHG emissions from off-site electricity generation at power plants (approximately 1,970 metric tons (2,170 U.S. tons) of CO₂-eq/year, including electricity associated with water transport and treatment), for a GHG operational emissions total of approximately 5,270 metric tons (about 5,795 U.S. tons of CO₂-eq/year. Annual emissions would represent less than one one-hundredth of one percent (0.0068 percent) of total Bay Area GHGs emitted in 2002.¹⁰⁸

Step 2: Assessing the significance of the impact on climate change. The project's incremental increases in GHG emissions associated with construction, traffic increases and commercial heating, electricity use, and solid waste disposal would contribute to regional and global increases in GHG emissions and associated climate change effects.

The 2020 GHG emissions limit for California, as adopted by ARB in December of 2007 is approximately 427 million metric tons (470 million U.S. tons) of CO₂-eq. The proposed project's annual contribution would be 0.0012 percent of this total 2020 emissions limit, and therefore the proposed project would not generate sufficient emissions of GHGs to contribute considerably to the cumulative effects of GHG emissions such that it would impair the state's ability to implement AB32, nor would the proposed project conflict with San Francisco's local actions to reduce GHG emissions.

OPR's guidance states that "Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project" And "In determining whether a proposed project's emissions are cumulatively considerable, the lead agency must consider the impact of the project when viewed in connection with the effects of "past, current and probable future projects."

As discussed previously, San Francisco has been actively pursuing cleaner energy, transportation and solid waste policies, through a framework of adopted ordinances, policies, and programs that, together with the fact that the City's Climate Action Plan calls for a reduction in GHG emissions to 20 percent below 1990 levels by the year 2012, could likely render the *Climate Action Plan for San Francisco* a "qualified Climate Action Plan," as defined by the BAAQMD. The proposed project would be consistent with the City's Climate Action Plan because it would be located in proximity to multiple transit lines on Market, Mission, and Second Streets, as well as the Transbay Terminal and the planned new Transit

¹⁰⁷ Construction emissions and annual emissions are not intended to be additive as they occur at different points in the project's lifecycle. Construction emissions are one-time emissions that occur prior to building occupancy. Annual emissions are incurred only after construction of the proposed project and are expected to occur annually for the life of the project.

¹⁰⁸ The Bay Area Air Quality Management District reported regional Bay Area GHGs emissions in 2002 at approximately 85 million CO₂-eq tons. Bay Area 2002 GHG emissions are used as the baseline for determining whether a project's contributions are significant as these are the most recent emissions inventory for the bay area.

Center; would provide bicycle parking and associated facilities, limited parking, and transportation management and transportation brokerage services, as specified in the *Planning Code*; is proposed to receive LEED® Gold certification; and would comply with the City's Construction and Demolition Debris Recovery Ordinance and Green Building Ordinance. These strategies would all directly or indirectly implement components of the Climate Action Plan. However, because no formal determination has been made as to whether the City's *Climate Action Plan* meets the BAAQMD definition, project GHG emissions are compared to the BAAQMD's proposed thresholds. As noted in Table 8, project emissions of GHGs would exceed the 1,100 metric tons per year threshold, but would fall below 4.6 metric tons per year per service population. Therefore, the proposed project would not exceed the BAAQMD's proposed significance threshold.

TABLE 8
TOTAL CO₂-EQUIVALENT EMISSIONS (METRIC TONS/YEAR)¹

| | |
|---|--------------|
| Transportation | 2,691 |
| Heating | 605 |
| Electricity Generation | 1,972 |
| Total Operation Emissions (CO₂-eq) | 5,267 |
| Operational Emissions per Service Population² | 3.22 |
| Total Construction Emissions (CO₂-eq) | 486 |

¹ Emissions are unmitigated.

² Service population emissions based on total project employment of approximately 1,640.

SOURCE: Environmental Science Associates, 2009

Further, the State of California Attorney General's office has compiled a list of GHG reduction measures that could be applied to a diverse range of projects.¹⁰⁹ The proposed project would meet the intent of many of the GHG reduction measures identified by the Attorney General's office: (1) as infill development, the project would be constructed in an urban area with good transit access, reducing vehicle trips and vehicle miles traveled, and therefore the project's transportation-related GHG emissions would tend to be less relative to the same amount of population and employment growth elsewhere in the Bay Area, where transit service is generally less available than in the central city of San Francisco;¹¹⁰ (2) as new construction, the proposed project would be required to meet California Energy Efficiency Standards for Residential and Nonresidential Buildings, helping to reduce future energy demand as well as reduce the project's contribution to cumulative regional GHG emissions; (3) the proposed project would also be required to comply with the Construction Demolition and Debris Recovery Ordinance, requiring at least 65 percent of all construction and demolition material to be diverted from landfills, as well as the Mandatory Recycling and Composting Ordinance ; and (4) the proposed project would include planting

¹⁰⁹ State of California, Department of Justice, "The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level." Updated 12/09/08. Available at:

http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf. Accessed October 18, 2009.

¹¹⁰ The California Air Pollution Control Officer's, *CEQA and Climate Change* (January 2008) white paper identifies infill development as yielding a "high" emissions reduction score (between 3-30%). This paper is available online at: <http://www.capcoa.org/ceqa/CAPCOA%20White%20Paper%20-%20CEQA%20and%20Climate%20Change.pdf>. Accessed April 15, 2008.

of new street trees on the Second and Howard Street project frontages, thereby aiding in carbon sequestration.¹¹¹ Additionally, through the process of LEED® Certification under the Gold category and the project's "green" building components, GHG emissions produced by the proposed project from space heating and electricity generation would be reduced compared to what would otherwise be the case if these energy saving devices were not incorporated into the proposed project. Moreover, the project would generate 3.22 metric tons of CO₂-eq/year per service population (employee). This would be considerably less than the BAAQMD's recommended threshold of 4.6 metric tons of CO₂-eq/year per service population for non-residential projects, and is indicative of the fact that development in San Francisco, with its extensive transit network, limited parking, mix of uses, and proximity of services is, in general, inherently likely to generate a reduced volume of GHG emissions than development of a comparable project elsewhere in the Bay Area, where the foregoing factors are less prevalent or lacking.

Given that: (1) the proposed project would be consistent with the City's Climate Action Plan and related ordinances, policies, and programs; (2) the proposed project would not exceed the BAAQMD's proposed significance threshold and would not contribute significantly to global climate change such that would impede the State's ability to meet its GHG reduction targets under AB 32, or impede San Francisco's ability to meet its GHG reduction targets under the Greenhouse Gas Reduction Ordinance; (3) San Francisco has implemented programs to reduce GHG emissions specific to new construction; and (4) current and probable future state and local GHG reduction measures will likely reduce a project's contribution to climate change, the proposed project would not contribute significantly, either individually or cumulatively, to global climate change. Therefore, Step 3 of the analysis—identification of mitigation measures—is not required.

In light of the above, project effects related to air quality would be less than significant.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

¹¹¹ Carbon sequestration is the capture and long-term storage of carbon dioxide before it is emitted into the atmosphere.

H. Wind

This section describes potential wind effects of the proposed project, based upon wind-tunnel testing of a scale model of the proposed project and models of nearby potential cumulative development.¹¹²

Setting

Tall buildings and structures can strongly affect the wind environment for pedestrians. Groups of structures tend to slow the winds near ground level, due to the friction and drag of the structures themselves on winds. Buildings that are much taller than their surrounding buildings intercept and redirect winds that might otherwise flow overhead, and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be relatively strong and also relatively turbulent, and can be incompatible with the intended uses of nearby ground-level spaces. In addition, building designs that present tall flat surfaces square to strong winds can create ground-level winds that can prove to be hazardous to pedestrians in the vicinity.

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to 4 miles per hour (mph) have no noticeable effect on pedestrian comfort. With velocity from 4 to 8 mph, wind is felt on the face. Winds from 8 to 13 mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole, while winds from 13 to 19 mph will raise loose paper, dust and dry soil, and will disarrange hair. For wind velocities from 19 to 26 mph, the force of the wind will be felt on the body. At 26 to 34 mph, umbrellas are used with difficulty; hair is blown straight; there is difficulty in walking steadily; and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over.

Regulatory Framework

In order to provide a comfortable wind environment for people in San Francisco, the City has established comfort criteria to be used in the evaluation of proposed buildings. Section 148 of the *Planning Code* specifically outlines these criteria for the Downtown Commercial (C-3) Districts, including the project site.¹¹³ The comfort criteria are based on pedestrian-level wind speeds that include the effects of turbulence; these are referred to as “equivalent wind speeds” (defined in the *Planning Code* as “an hourly mean wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians”).

Planning Code Section 148 establishes equivalent wind speeds of 7 mph as the comfort criterion for seating areas and 11 mph as the comfort criterion for areas of substantial pedestrian use, and states that new buildings and additions to buildings may not cause ground-level winds to exceed these levels more

¹¹² Environmental Science Associates, “Technical Memorandum: Potential Wind Conditions, Proposed 222 Second Street Development, San Francisco, California,” September 12, 2007; “Wind Evaluation of Revised Project Design,” February 29, 2008; and “Wind Evaluation of Revised Project Design,” January 8, 2010, 2010. These documents are included in Appendix C.

¹¹³ Additional *Planning Code* sections apply the same criteria to the Rincon Hill, Van Ness Avenue, and South of Market areas.

than 10 percent of the time year round between 7:00 a.m. and 6:00 p.m.¹¹⁴ If existing wind speeds exceed the comfort level, or when a project would result in exceedances of the comfort criteria, an exception may be granted, pursuant to Section 309, if the building or addition cannot be designed to meet the criteria “without creating an unattractive and ungainly building form and without unduly restricting the development potential” of the site, and it is concluded that the exceedance(s) of the criteria would be insubstantial “because of the limited amount by which the comfort level is exceeded, the limited location in which the comfort level is exceeded, or the limited time during which the comfort level is exceeded.” Section 148 also establishes a hazard criterion, which is a 26 mph equivalent wind speed for a single full hour, or approximately 0.0114% of the time. Under Section 148, new buildings and additions may not cause wind speeds that meet or exceed this hazard criterion.¹¹⁵ Under Section 148, no exception may be granted for buildings that result in winds that exceed the hazard criterion.

The comfort criteria are based on wind speeds that are measured for one minute and averaged. In contrast, the hazard criterion is based on wind speeds that are measured for one hour and averaged; when stated on the same basis as the comfort criteria wind speeds, the hazard criterion wind speed is a one-minute average of 36 mph.

Existing Wind Conditions

The general vicinity of the project site is sheltered to moderately windy; the average wind speed for the 51 points tested in the wind tunnel (see Figure 17) is 10.1 mph.¹¹⁶ Wind speeds in pedestrian areas range from 6 to 15 mph. Wind speeds in excess of the 11-mph pedestrian comfort criterion currently occur at 10 of the 51 locations, and wind speeds of 14 mph or more occur at three of the 10 locations. The highest wind speed in the vicinity (15 mph) occurs at the southeast corner of the 26-story Pacific Telephone Building at 140 New Montgomery Street, located mid-block between Mission and Howard Streets.

The Code’s wind hazard criterion of 36 mph is not exceeded at any of the test locations under existing conditions.

Impacts

Significance Criteria

A project would normally have a significant impact if it would:

- Cause the 26-miles-per-hour wind hazard criterion to be exceeded for more than one hour per year.

¹¹⁴ The *Planning Code* specifies the hours of 7:00 a.m. to 6:00 p.m. In contrast, the available weather data, as aggregated, cover the hours of 6:00 a.m. to 8:00 p.m. Thus, observations from two additional evening hours and one additional morning hour are included in the wind speed distribution data.

¹¹⁵ Because the hazard criterion is stated in terms of 1 hour of exceedance, it is most appropriate to report exceedances of this criterion in terms of the number of hours per year that the excess occurs, rather than the accompanying wind speeds. Thus, for each wind analysis, the number of locations and the total sum of the durations of exceedances of the hazard criterion are important measures of effect. This differs from reporting of both comfort criteria, for which wind speeds exceeded 10% of the time are examined and presented, but statistics other than the number of locations are not detailed.

¹¹⁶ “Wind speed” refers to equivalent wind speed (including the effects of turbulence) that is exceeded 10 percent of the time.

A project that would cause exceedances of the comfort criteria, but not the wind hazard criterion, would not be considered to have a significant impact.

Impact Analysis

Impact WS-1: The proposed project would not result in a new exceedance of the wind hazard criterion, either individually or cumulatively. (Less than Significant)

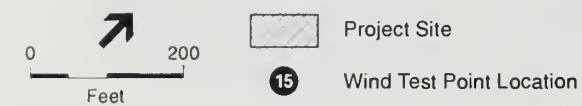
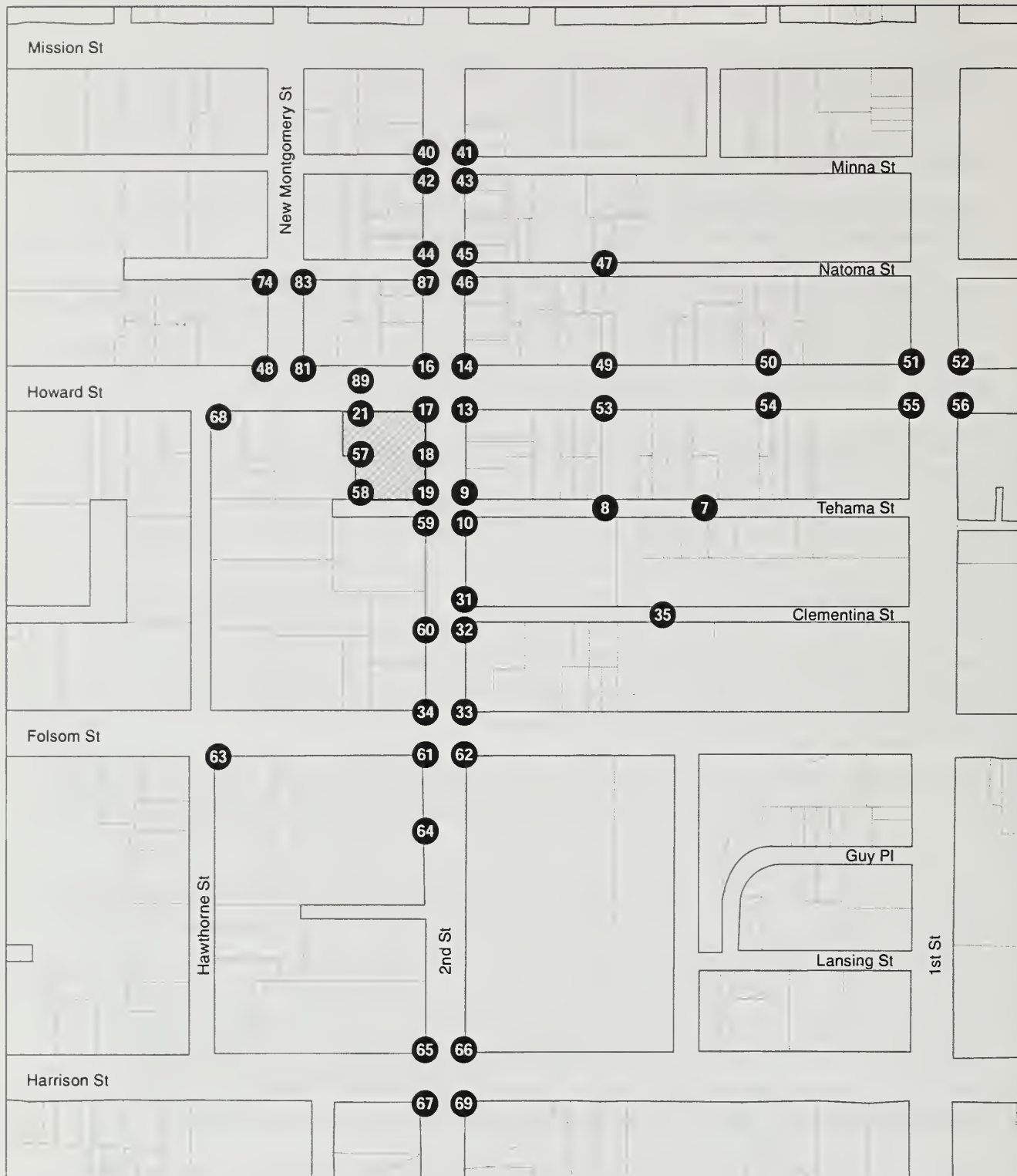
Wind tunnel testing was performed for a previous (2007) design for the project site, the results of which are summarized in the following discussion. Figure 17, p. 131, depicts the wind test point locations. A subsequent evaluation for the currently proposed design concluded that wind speeds in the vicinity should be similar to those measured during testing for the previous design.

As indicated in Table 9, p. 132, testing demonstrated that the project would eliminate four existing pedestrian-comfort criterion exceedances and create six new exceedances, for a total of 12 exceedances of the pedestrian comfort criterion, compared to 10 exceedances under existing conditions. Exceedances would be eliminated at Second and Clementina Streets, at Second and Folsom Streets, at Second and Tehama Streets, and at Hawthorne and Howard Streets, while new exceedances would occur at three of the four corners of the Second/Howard Streets intersection, at the southeast corner of the project site (Second and Tehama Streets), immediately across Second Street from this location, and at the southwest corner of the project site, also on Tehama Street. Wind conditions would continue to be moderately windy; the average wind speed would increase by about 0.1 mph, to 10.2 mph, and wind speeds at the 51 test points would continue to range from 6 to 15 mph.

Wind speeds along the Howard, Tehama and Second Street sidewalks immediately adjacent to the project would increase slightly, as demonstrated in testing of the 2007 design, but winds would continue to meet the *Planning Code* hazard criterion of 26 mph for a single hour of the year at all sidewalk locations.

With the project, as compared to existing conditions, wind speeds would increase at 13 locations; remain unchanged at 24 locations; and decrease at 14 locations. Wind speeds of 14 mph or more would occur at four of the 51 test locations, compared to three locations under existing conditions. The highest wind speed in the vicinity (15 mph) would occur at the northeast corner of the project, at the intersection of Howard and Second Streets. The greatest increase in wind speed (7 mph), from 7 mph under existing conditions to 14 mph with the project, would occur at the southwest corner of the proposed project, adjacent to the planned loading dock driveway. Wind speeds would increase by more than 3 mph at three locations, and decrease by more than 3 mph at two locations.

The project would result in no wind hazard exceedances, and therefore would have no significant effect related to wind. However, the project sponsor would seek an exception to the requirements of *Planning Code* Section 148 because the project would result in a net increase of two exceedances of the pedestrian comfort criterion and would not eliminate all existing wind speed exceedances of the pedestrian comfort level criterion.



SOURCE: ESA

Case No. 2006.1106E: 222 2nd Street (206337)

Figure 17
Wind Test Point Locations

TABLE 9: WIND TEST RESULTS

| Wind Comfort Analysis: Criterion Speed 11 mph | | | | | | | | | | | | | Wind Hazard Analysis: Criterion Speed 26 mph ^a | | | | | | | | | | | | | | | | | |
|---|------------------|------------------------------|------|------------------|------------------------------|-----------------------|------|------------------|------------------------------|----------------|------------|------------------|---|------|------------------|----------------------------|------|------------------|----------------------------|------|-----------------------|----------------------------|------|--|--|------------|--|--|--|--|
| Point | Existing Setting | | | | | Existing plus Project | | | | | Cumulative | | | | | Existing Setting | | | | | Existing plus Project | | | | | Cumulative | | | | |
| | Wind Speed (mph) | Pct. Time Criterion Exceeded | Exc. | Wind Speed (mph) | Pct. Time Criterion Exceeded | Chg. Fr. Exist. | Exc. | Wind Speed (mph) | Pct. Time Criterion Exceeded | Chg. Fr. Proj. | Exc. | Wind Speed (mph) | Hrs./Yr. Exceeds Criterion | Exc. | Wind Speed (mph) | Hrs./Yr. Exceeds Criterion | Exc. | Wind Speed (mph) | Hrs./Yr. Exceeds Criterion | Exc. | Wind Speed (mph) | Hrs./Yr. Exceeds Criterion | Exc. | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 10 | 6 | | 8 | 3 | -2 | | 9 | 4 | 1 | | 17 | 0 | | 18 | 0 | n/a | | 16 | 0 | n/a | | | | | | | | | |
| 8 | 11 | 10 | | 10 | 7 | -1 | | 10 | 6 | | | 23 | 0 | | 23 | 0 | n/a | | 19 | 0 | n/a | | | | | | | | | |
| 9 | 11 | 10 | | 13 | 19 | 2 | • | 14 | 20 | 1 | • | 29 | 0 | | 30 | 0 | n/a | | 27 | 0 | n/a | | | | | | | | | |
| 10 | 11 | 9 | | 10 | 8 | | | 12 | 16 | 2 | • | 24 | 0 | | 20 | 0 | n/a | | 21 | 0 | n/a | | | | | | | | | |
| 13 | 11 | 9 | | 13 | 19 | 3 | • | 13 | 19 | | | 26 | 0 | | 28 | 0 | n/a | | 24 | 0 | n/a | | | | | | | | | |
| 14 | 11 | 9 | | 13 | 14 | 2 | • | 10 | 8 | -2 | ■ | 27 | 0 | | 32 | 0 | n/a | | 23 | 0 | n/a | | | | | | | | | |
| 16 | 6 | 0 | | 11 | 7 | 4 | | 10 | 7 | | | 15 | 0 | | 20 | 0 | n/a | | 19 | 0 | n/a | | | | | | | | | |
| 17 | 10 | 7 | | 15 | 24 | 5 | • | 16 | 27 | 1 | • | 22 | 0 | | 25 | 0 | n/a | | 27 | 0 | n/a | | | | | | | | | |
| 18 | 11 | 9 | | 11 | 10 | | | 12 | 13 | 1 | • | 26 | 0 | | 26 | 0 | n/a | | 32 | 0 | n/a | | | | | | | | | |
| 19 | 10 | 8 | | 12 | 17 | 2 | • | 13 | 15 | 1 | • | 23 | 0 | | 22 | 0 | n/a | | 29 | 0 | n/a | | | | | | | | | |
| 21 | 11 | 11 | | 11 | 11 | | | 12 | 15 | 1 | • | 20 | 0 | | 22 | 0 | n/a | | 26 | 0 | n/a | | | | | | | | | |
| 31 | 12 | 12 | • | 11 | 11 | | ■ | 12 | 14 | 1 | • | 23 | 0 | | 26 | 0 | n/a | | 25 | 0 | n/a | | | | | | | | | |
| 32 | 11 | 9 | | 9 | 3 | -2 | | 10 | 5 | 1 | | 23 | 0 | | 16 | 0 | n/a | | 17 | 0 | n/a | | | | | | | | | |
| 33 | 14 | 23 | • | 10 | 5 | -5 | ■ | 11 | 11 | 2 | | 24 | 0 | | 17 | 0 | n/a | | 19 | 0 | n/a | | | | | | | | | |
| 34 | 11 | 10 | | 7 | 0 | -3 | | 8 | 2 | 1 | | 26 | 0 | | 13 | 0 | n/a | | 16 | 0 | n/a | | | | | | | | | |
| 35 | 10 | 7 | | 11 | 10 | | | 11 | 8 | | | 18 | 0 | | 20 | 0 | n/a | | 18 | 0 | n/a | | | | | | | | | |
| 40 | 8 | 2 | | 8 | 2 | | | 8 | 5 | | | 16 | 0 | | 14 | 0 | n/a | | 20 | 0 | n/a | | | | | | | | | |
| 41 | 12 | 13 | • | 12 | 12 | | • | 11 | 9 | -1 | ■ | 20 | 0 | | 20 | 0 | n/a | | 22 | 0 | n/a | | | | | | | | | |
| 42 | 9 | 5 | | 9 | 3 | | | 8 | 4 | -1 | | 17 | 0 | | 18 | 0 | n/a | | 20 | 0 | n/a | | | | | | | | | |
| 43 | 10 | 5 | | 10 | 4 | | | 8 | 5 | -1 | | 17 | 0 | | 17 | 0 | n/a | | 20 | 0 | n/a | | | | | | | | | |
| 44 | 7 | 1 | | 7 | 1 | | | 6 | 0 | -1 | | 14 | 0 | | 14 | 0 | n/a | | 13 | 0 | n/a | | | | | | | | | |
| 45 | 10 | 8 | | 11 | 10 | 1 | | 7 | 1 | -4 | | 25 | 0 | | 26 | 0 | n/a | | 15 | 0 | n/a | | | | | | | | | |
| 46 | 10 | 8 | | 9 | 7 | -1 | | 7 | 2 | -2 | | 21 | 0 | | 22 | 0 | n/a | | 17 | 0 | n/a | | | | | | | | | |
| 47 | 7 | 0 | | 8 | 1 | | 1 | 7 | 0 | -1 | | 13 | 0 | | 14 | 0 | n/a | | 12 | 0 | n/a | | | | | | | | | |
| 48 | 11 | 10 | | 10 | 8 | -1 | | 9 | 4 | -1 | | 30 | 0 | | 26 | 0 | n/a | | 19 | 0 | n/a | | | | | | | | | |
| 49 | 8 | 1 | | 8 | 3 | | | 8 | 0 | | | 16 | 0 | | 18 | 0 | n/a | | 15 | 0 | n/a | | | | | | | | | |
| 50 | 10 | 6 | | 10 | 4 | | | 9 | 3 | | | 19 | 0 | | 17 | 0 | n/a | | 17 | 0 | n/a | | | | | | | | | |
| 51 | 9 | 2 | | 9 | 2 | | | 9 | 6 | 1 | | 16 | 0 | | 15 | 0 | n/a | | 22 | 0 | n/a | | | | | | | | | |
| 52 | 6 | 0 | | 6 | 0 | | | 7 | 1 | 1 | | 11 | 0 | | 10 | 0 | n/a | | 10 | 0 | n/a | | | | | | | | | |
| 53 | 9 | 5 | | 10 | 8 | 1 | | 9 | 4 | -1 | | 19 | 0 | | 21 | 0 | n/a | | 17 | 0 | n/a | | | | | | | | | |
| 54 | 10 | 8 | | 10 | 9 | | | 9 | 3 | -2 | | 19 | 0 | | 20 | 0 | n/a | | 20 | 0 | n/a | | | | | | | | | |
| 55 | 8 | 1 | | 8 | 1 | | | 10 | 7 | 2 | | 14 | 0 | | 14 | 0 | n/a | | 22 | 0 | n/a | | | | | | | | | |
| 56 | 8 | 1 | | 8 | 1 | | | 9 | 3 | 1 | | 15 | 0 | | 13 | 0 | n/a | | 21 | 0 | n/a | | | | | | | | | |
| 57 | 6 | 0 | | 8 | 3 | 2 | | 11 | 11 | 3 | | 10 | 0 | | 19 | 0 | n/a | | 27 | 0 | n/a | | | | | | | | | |
| 58 | 7 | 0 | | 14 | 19 | 7 | • | 15 | 24 | 1 | • | 14 | 0 | | 26 | 0 | n/a | | 29 | 0 | n/a | | | | | | | | | |
| 59 | 12 | 13 | • | 11 | 9 | -1 | ■ | 9 | 6 | -2 | | 24 | 0 | | 21 | 0 | n/a | | 22 | 0 | n/a | | | | | | | | | |
| 60 | 11 | 9 | | 9 | 6 | -1 | | 10 | 7 | 1 | | 25 | 0 | | 21 | 0 | n/a | | 24 | 0 | n/a | | | | | | | | | |
| 61 | 11 | 11 | | 10 | 6 | -1 | | 10 | 6 | | | 19 | 0 | | 18 | 0 | n/a | | 18 | 0 | n/a | | | | | | | | | |
| 62 | 10 | 8 | | 9 | 4 | -1 | | 10 | 5 | | | 19 | 0 | | 18 | 0 | n/a | | 17 | 0 | n/a | | | | | | | | | |
| 63 | 14 | 21 | • | 14 | 21 | | • | 13 | 18 | -1 | • | 27 | 0 | | 27 | 0 | n/a | | 24 | 0 | n/a | | | | | | | | | |
| 64 | 10 | 7 | | 7 | 1 | -3 | | 8 | 1 | | | 18 | 0 | | 15 | 0 | n/a | | 16 | 0 | n/a | | | | | | | | | |
| 65 | 9 | 4 | | 8 | 4 | | | 8 | 3 | -1 | | 22 | 0 | | 22 | 0 | n/a | | 22 | 0 | n/a | | | | | | | | | |
| 66 | 12 | 16 | • | 12 | 17 | | • | 11 | 11 | -1 | ■ | 24 | 0 | | 21 | 0 | n/a | | 20 | 0 | n/a | | | | | | | | | |
| 67 | 8 | 2 | | 9 | 3 | | | 8 | 2 | | | 19 | 0 | | 19 | 0 | n/a | | 20 | 0 | n/a | | | | | | | | | |
| 68 | 12 | 17 | • | 11 | 12 | -1 | ■ | 11 | 7 | -1 | | 22 | 0 | | 19 | 0 | n/a | | 18 | 0 | n/a | | | | | | | | | |
| 69 | 12 | 14 | • | 12 | 12 | | • | 11 | 10 | -1 | ■ | 20 | 0 | | 20 | 0 | n/a | | 20 | 0 | n/a | | | | | | | | | |
| 74 | 15 | 23 | • | 12 | 15 | -3 | • | 12 | 12 | -1 | • | 32 | 0 | | 30 | 0 | n/a | | 28 | 0 | n/a | | | | | | | | | |
| 81 | 11 | 12 | | 11 | 10 | | | 11 | 9 | | | 19 | 0 | | 19 | 0 | n/a | | 19 | 0 | n/a | | | | | | | | | |
| 83 | 12 | 12 | • | 14 | 15 | 2 | • | 9 | 6 | -4 | ■ | 26 | 0 | | 30 | 0 | n/a | | 21 | 0 | n/a | | | | | | | | | |
| 87 | 9 | 4 | | 9 | 4 | | | 8 | 3 | -1 | | 20 | 0 | | 20 | 0 | n/a | | 18 | 0 | n/a | | | | | | | | | |
| 89 | 6 | 0 | | 89 | 9 | 3 | | 10 | 5 | | | 14 | 0 | | 18 | 0 | n/a | | 19 | 0 | n/a | | | | | | | | | |
| Avg. | 10.1 | 8 | 10 | 10.2 | 8 | 0.2 | 12 | 10.0 | 8 | -0.2 | 11 | 21 | 0 | 0 | 21 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | | | | | | | |
| Exceedances | 10 | | | | | 12 | | | | | 11 | | | | | 0 | | | | | 0 | | | | | | | | | |

^a Equivalent to a wind speed of 36 mph when stated on the same basis as the comfort criteria wind speeds.

• – Indicates Exceedance of Criterion; ■ – Indicates Exceedance in a Prior Scenario is Eliminated; n/a – Not Applicable.

As part of the testing for the 2007 project design, cumulative effects of the project were analyzed which considered development in the vicinity of several very tall buildings proposed or under consideration in the area around the Transbay Terminal. The cumulative test remains applicable to the proposed project as currently designed, because the changes in project design would not substantially affect overall wind conditions in the project vicinity, compared to conditions with the project design as tested. This cumulative test scenario included a new office building at 555 Mission Street; an office building now under construction at 535 Mission Street; approved projects at 201 Second Street, 645 Howard Street (One Hawthorne Street), and 524 Howard Street; and the following potential future buildings: Palace Hotel Tower (700 feet), 50 First Street (1,100 feet), Transit Tower (1,200 feet); TJPA site on Howard Street between First and Second (800 feet), and 509 Howard (Foundry Square; 500 feet).¹¹⁷

Under this cumulative scenario, the average wind speed would decrease by about 0.2 mph, compared to with-project conditions, and by about 0.1 mph, compared to existing conditions, to 10.0 mph. Compared to the project scenario, wind speeds would decrease at 20 of the 51 test locations and increase at 18 locations, while remaining unchanged at 13 locations. Wind speeds would range from 6 to 16 mph. Compared to existing conditions, wind speeds would increase at 15 locations; remain unchanged at 9 locations, and decrease at 27 locations.

Under the cumulative scenario, four existing and one project-generated exceedance of the pedestrian comfort criterion would be eliminated, while four new exceedances would occur and five existing exceedances would remain, for a total of 11 exceedances of the pedestrian comfort criterion—one more than under existing conditions and one fewer than with the project alone. Cumulative development would not result in any new wind hazard exceedances, and thus would result in no significant effect related to wind.

In summary, neither the proposed project nor cumulative development would substantially affect ground-level winds, with both average wind speeds and the number of exceedances of the pedestrian comfort criterion virtually unchanged under both the with-project and cumulative scenarios. Under both with-project and cumulative conditions, the project area would remain moderately windy, although wind speeds at about 40 of 51 test points would meet the pedestrian comfort criterion of 11 mph under all three scenarios. The project would not result in any new exceedances of the wind hazard criterion. Therefore, effects related to wind would be less than significant and no mitigation is required.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

¹¹⁷ Several of the cumulative buildings tested were at heights greater than currently proposed (e.g., the Transit Tower is now proposed to be 1,000 feet tall; 50 First Street, to be up to 850 feet; no tower is proposed at 509 Howard Street; and other, less substantial changes). Thus, the results of the cumulative wind test can be considered to be conservative.

I. Shadow

This section describes shadow effects on publicly accessible areas, including public parks, publicly-accessible private open spaces, and sidewalks.

Setting

Open space in the project vicinity is limited. Generally, the open space as exists nearby is in the form of publicly accessible, privately owned open space developed, in accordance with the Downtown Plan and *Planning Code*, in conjunction with newer office buildings. The closest of these spaces to the project site is located across Second Street at 235 Second Street (the CNet building), where there is a hardscaped plaza with seating and a sculpture at the corner of Second and Clementina Streets, which connects with the building lobby. Other publicly accessible open spaces exist on Mission Street, one block to the north. These spaces include the enclosed “winter garden” at 101 Second Street, a plaza at 560 Mission Street, a plaza at 555 Mission Street, and the rooftop “sun terrace” above a parking garage on Mission Street adjacent to 100 First Street. An office tower approved at 535 Mission Street (construction was suspended in late 2008) will also include on-site open space. Farther north is a publicly accessible plaza on the south and east sides of the One Post Street office tower (at Post, Montgomery, and Market Streets) and a smaller plaza on the east side of Montgomery Street at Market Street; each of these plazas surrounds an entrance to the BART/Muni Metro Montgomery station. To the south of the project site, there is a publicly accessible open space at Marathon Plaza, at 333 Second Street, between Folsom and Harrison Streets. To the east, there are open spaces at the northwest, northeast, and southeast corners of First and Howard Streets, developed as part of the Foundry Square office project.¹¹⁸ There are no public parks or other public open spaces in the immediate project vicinity. The nearest public open space is Yerba Buena Gardens, a San Francisco Redevelopment Agency property, at Third and Howard Streets, one block west of the project site. Across Mission Street to the north of Yerba Buena Gardens is Jessie Square, an open space south of the Contemporary Jewish Museum. Proposals for the new Transbay Terminal include a public park located on the roof of the terminal, approximately 70 feet above grade level. However, this park has not been approved for development. Additionally, the draft Transit Center District Plan (November 2009) proposes the creation of a new public open space on the northeast corner of Second and Howard Streets, diagonally across the intersection from the project site, where the Caltrain extension project would result in demolition of the existing buildings. The draft Plan also proposes a plaza adjacent to the new Transbay Transit Center and Transit Tower, and a number of improvements to sidewalks and alleys to, in part, improve their attractiveness as public spaces.

¹¹⁸ A fourth office building is approved at the southwest corner of that intersection, and will likewise have a corner plaza.

Regulatory Framework

Sunlight Ordinance

Section 295 of the *Planning Code*, the Sunlight Ordinance, was adopted through voter approval of Proposition K in November 1994 to protect certain public open spaces from shadowing by new structures. Section 295 prohibits the issuance of building permits for structures or additions to structures greater than 40 feet in height that would shade property under the jurisdiction of or designated to be acquired by the Recreation and Park Commission, during the period from one hour after sunrise to one hour before sunset, unless the Planning Commission, following review and comment by the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission, determines that such shade would have an insignificant impact on the use of such property. Yerba Buena Gardens, which is under the jurisdiction of the San Francisco Redevelopment Agency, is not subject to Section 295. The nearest parks under Recreation and Park Department jurisdiction and subject to Section 295 are South Park, in the center of the block bounded by Second, Third, Bryant, and Brannan Streets; Justin Herman Plaza, at the foot of Market Street; South of Market Recreation Center, at Sixth and Folsom Street; Union Square; and St. Mary's Square, on Pine Street near Kearny Street. None of these Recreation and Park Department properties other than South Park is less than about 2,350 feet from the project site, and South Park is about 1,950 feet east-southeast of the project site. Based on the length and direction of shadows cast, none of these parks would be affected by shadow from the proposed project during the hours covered by Section 295.

Other Planning Code Regulations

Planning Code Section 146, applicable to certain streets in the C-3 zoning districts, requires that buildings and additions fit within an envelope defined by a plane sloping away from the street at a prescribed angle above a prescribed height "in order to maintain direct sunlight on public sidewalks in certain downtown areas during critical periods of use." Section 146 applies to the west side of Second Street, specifying that a building be within an envelope that slopes away from the street at an angle of 62 degrees beginning at 132 feet above grade. An exception may be granted, pursuant to the procedures of Section 309, Permit Review in C-3 Districts, if no new shadow is created, or if "the shadow created by the penetration of the plane is deemed insignificant because of the limited extent or duration of the shadow or because of the limited public use of the shadowed space."

Planning Code Section 147, applicable to the C-3, RSD, SLR, SLI, or SSO zoning districts, where height limits are greater than 40 feet, requires that all new development and additions to existing structures where the height exceeds 50 feet must be shaped to minimize shadow on public plazas or other publicly accessible open spaces other than those protected by Section 295, "in accordance with the guidelines of good design and without unduly restricting the development potential of the property." The following factors must be taken into account in determining compliance with this criterion: the amount of area shadowed, the duration of the shadow, and the importance of sunlight to the type of open space being shadowed.

Impacts

Significance Criteria

Implementation of the proposed project would have a significant shadow impact if it were to create new shadow in a manner that would:

- Affect, in an adverse manner, the use of any park or open space under the jurisdiction of the Recreation and Park Department;
- Substantially affect the usability of other existing publicly accessible open space or outdoor recreation facilities or other public areas.

Impact Analysis

Impact WS-2: The proposed project would not adversely affect the use of any park or open space under the jurisdiction of the Recreation and Park Department, nor would it substantially affect the usability of other existing publicly accessible open space or outdoor recreation facilities or other public areas, either individually or cumulatively. (Less than Significant)

Based on the results of computer modeling of shadows, the proposed project would not cast new shadow on any open space under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, and therefore the project would comply with *Planning Code* Section 295.

Figures 18 through 21 depict shadow from the proposed project for representative times of day during the four seasons: in December, on the winter solstice, the sun is at its lowest and shadows are at their longest, while on the summer solstice in June, the sun is at its highest and shadows are at their shortest. Shadows are also shown at the spring equinox, when shadows are midway through a period of shortening, and at the fall equinox, when shadows are midway through a period of lengthening. Shadows on any other day of the year would be within the range of shadows presented in Figures 18 through 21, pp. 137 – 140.

The proposed project would cast shadow on the privately owned, publicly accessible open space at 235 Second Street in the late afternoon, from June through September. New project shadow would fall on this open space beginning as early as about 3:30 p.m. in June and as late as about 5:00 p.m. in September. During all of the time when new shadow would fall on the 235 Second Street open space, much of this open space would already be shaded by the 235 Second Street building itself, and project shadow would cover the unshaded portion of the open space closest to the corner of Second and Clementina Streets. No new shadow would fall on the 235 Second Street open space between October and May, because shadow from existing buildings would already reach this open space at the time that project shadow would also reach the space.

The project would also cast new shadow on the open space adjacent to the newly constructed office building at 555 Mission Street during the late fall and early winter (mid-November through late January), for about 30 minutes during the period just before the 12:00 noon. This new shadow would fall mainly on the rear (Minna Street) side of this open space, where there are stone benches amidst deciduous trees



10 am



12 noon



3 pm

- Project Site
- Existing Shadow
- Net New Project Shadow
- Planned "City Park" at New Transit Center
- A 246 Second St
- B Foundry Square











10 am



12 noon



3 pm

-  Project Site
-  Existing Shadow
-  Net New Project Shadow
-  Planned "City Park" at New Transit Center
-  A 246 Second St
-  B Foundry Square











10 am



12 noon



3 pm

-  Project Site
-  Existing Shadow
-  Net New Project Shadow
-  Planned "City Park" at New Transit Center
-  246 Second St
-  Foundry Square



SOURCE: ESA

Case No. 2006.1106E: 222 2nd Street (206337)

Figure 20
September 21 Shadow Patterns



10 am



12 noon



3 pm

- Project Site
- Existing Shadow
- Net New Project Shadow
- Planned "City Park" at New Transit Center
- A 246 Second St
- B Foundry Square



planted in decomposed granite. This rear, or southerly, portion of the 555 Mission Street open space is currently in sunlight during the midday hours because the area to the south, between Minna and Natoma Streets, is occupied by a surface parking lot.¹¹⁹ Project shadow would not reach the open space adjacent to the office building at 560 Mission Street, directly across Mission Street from 555 Mission Street, nor would it reach the 100 First Street sun terrace or the open space at the planned 535 Mission Street building.

The proposed project would cast shadow on two other publicly accessible open spaces around the winter solstice, when shadows are longest. In the early morning, the project would cast new shadow on the publicly accessible open space at One Post Street (too far north to be shown on Figures 18 through 21). This shadow would last for about 15 minutes and would occur during the period between about 8:00 a.m. and 8:30 a.m. from mid-November through late January. In the mid- to late afternoon, project shadow would reach the edge of the open space in front of the office buildings at 400 and 401 Howard Street (part of the Foundry Square complex, on the northwest and southeast corners of First and Howard Streets). This shadow would occur from late November through mid-January, for about 15 minutes, during the period between about 2:45 p.m. and 3:30 p.m. (see Figure 21). Most of the open space at 400 Howard Street would already be in shadow from the 400 Howard Street building itself when shadow from 222 Second Street would reach this space, but because the proposed project would be on the south side of Howard Street, project shadow would cover the unshaded portion of this open space nearest the corner of First and Howard Streets. At 401 Howard, the open space is generally in the sun because there is a parking lot across First Street (although another office building is approved at that site).

This new shadow described above would be of limited duration and would occur at each of the open spaces noted over only a few weeks of the year in late fall and early winter. Because of the limited duration and extent, these shadows would not be expected to substantially adversely affect use of the open spaces. Therefore, impact would be less than significant.

The proposed 222 Second Street project would not cast new shadow on the following publicly accessible open spaces because other buildings already cast shadow during times when project shadow would otherwise fall on the open spaces: the open space east of Montgomery Street at Market Street (shaded by buildings directly across Market Street); the open space at Marathon Plaza, 333 Second Street (shaded by Marathon Plaza itself); the open space at 300 Beale Street (shaded by that building); and the Jessie Square open space in front (south) of the Contemporary Jewish Museum on Mission Street west of Third Street (shaded by the Aronson Building at 700 Mission Street and the St. Regis tower at 125 Third Street).¹²⁰

The proposed 222 Second Street project would cast new shadow on Yerba Buena Gardens, including the grassy open space (esplanade) in the center of the block bounded by Third, Fourth, Mission, and Howard Streets. (As noted in the Setting, Yerba Buena Gardens is not subject to *Planning Code* Section 295.) New shadow would be added to this open space area in the early morning hours of the summer months

¹¹⁹ The proposed new Transit Center (replacement for the existing Transbay Terminal) would, if built, occupy the area immediately south of the 555 Mission Street open space and would also shade the open space during the same midday period as would the 222 Second Street project.

¹²⁰ Jessie Square would be further shaded by the planned Mexican Museum to its east.

when existing buildings of the Yerba Buena Center for the Arts (theater and gallery), as well as the elevated entrance to Moscone Center North and the restaurants atop the roof of this structure, already shade much of block.

New shadow would occur between September and May in the early hours of the morning. In mid May, the project would add shadow between 7:15 a.m. and 8:00 a.m. In May and June the new shading would occur from the “first Proposition K minute” (the first minute after one hour after sunrise, ranging between 6:48 a.m. and 6:55 a.m.) until approximately 7:30 a.m. The project shadow would persist on Yerba Buena Center until 7:30 a.m. in mid July and recede by 8:00 a.m. in mid August. All project-related shadow effects would gone by the first week of September.

The maximum amount of new shadow at any one time would be approximately 34,313 square feet at 7:00 a.m. on June 21, the summer solstice. (At this time, nearly all of the square lawn area would be shaded, with most of the shadow cast by existing buildings.) Figure 22 depicts project shadow at this time.

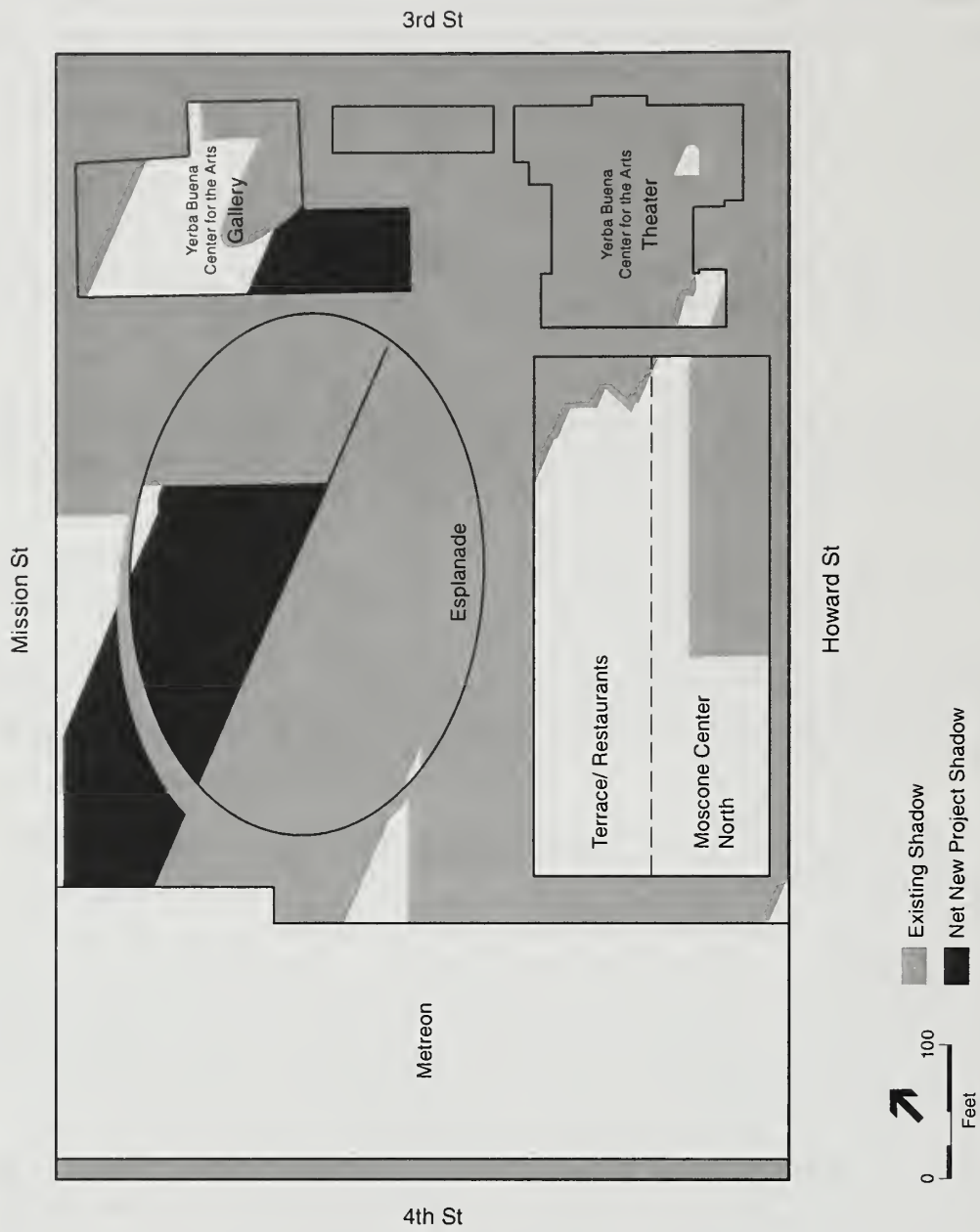
Because project shadow on Yerba Buena Center would occur only in the early morning between May and September, and would recede by no later than 8:00 a.m., project shadow would not substantially affect the use or enjoyment of this open space, and the effect would be less-than-significant.

The project as proposed would have a street wall approximately 216 feet high on Second Street, with a 24-foot, 6-inch setback from Second Street above the 17th floor. A line from this setback to the top of the building would create an angle of approximately 11 degrees, and thus the projects would not comply with the sun angle plane of 62 degrees, above 132 feet in height, required from Second Street by *Planning Code* Section 146, and the project sponsor is therefore seeking an exception to the requirements of Section 146, pursuant to Section 309.

Because project shadow on publicly accessible open spaces would be relatively limited, the project appears to comply with *Planning Code* Section 147.

Cumulative Impacts

Cumulative shadow impacts could occur as a result of other new buildings in the vicinity, including approved projects at 201 Second Street, across the street from the project site, and 645 Howard Street (One Hawthorne Street), west of the site, and from the building currently under construction at 631 Folsom Street. However, none of these projects would shade Recreation and Park Department properties, nor would they add more than incremental shadow to Yerba Buena Center in the very early morning, prior to about 8:00 a.m., during a limited portion of the year. This additional early morning shadow would not be expected to substantially affect the use or enjoyment of the outdoor open space at Yerba Buena Center. Therefore, cumulative shadow effects on Yerba Buena Center would be less than significant.



Case No. 2006.1106E: 222 2nd Street (206337)
Figure 22
 June 21, 7 am Shadow Patterns
 on Yerba Buena Center

SOURCE: ESA

As described in Chapter III, Land Use, p. 35, a number of high-rise buildings are currently proposed or otherwise under consideration in the area around the Transbay Terminal, in the project vicinity. This includes several towers that would be taller than permitted by existing height limits. Based on the proposed building heights, it is clear that some of these proposed and planned buildings, including the 1,000-foot or greater tower anticipated to be built as part of the new transit terminal, would cast shadow on parks protected by Section 295 of the *Planning Code*. These new buildings would similarly contribute cumulatively to new shadow effects on the proposed elevated City Park. New shadow from these proposed buildings could potentially result in a significant impact. However, inasmuch as the proposed 222 Second Street project would not add new shadow to any Recreation and Park Department properties, nor would it substantially interfere with the use of Yerba Buena Center, the proposed project would not make a considerable contribution to potential future shadow effects.

The proposed project would cast shadow on the planned “City Park,” a publicly-accessible open space proposed to be developed on the roof of the new Transit Center (replacement for the existing Transbay Terminal). Project shadow would reach the southwestern corner of the City Park for about 30 minutes daily around 12:00 noon in late fall and early winter (between early November and early February). The greatest extent of new shadow from the project on the proposed new terminal building would occur on December 21 at approximately 12:00 noon, when new shadow from the project would cover an approximately 100-foot square (about 10,000 square feet) of the at the southwest corner of the proposed park, or about 5 percent of the proposed 5.4-acre park site atop the Transit Center. Although project shadow would occur at midday when the proposed park would be expected to be most heavily used, by downtown workers, because the project would shade a very small portion of the park for a relatively short period of time, project shadow would not be anticipated to substantially affect use of the planned City Park. It should be noted that there is no adopted design for the City Park, and therefore the planned uses of this open space are not known.

Therefore, cumulative impacts would not be significant, and no mitigation is required.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

J. Recreation and Public Space

Setting

The project site is approximately seven blocks west of The Embarcadero at the San Francisco Bay shoreline. Other open spaces in the vicinity include South Park (an oval park enclosed by a neighborhood retail district located between Second and Third Streets and Bryant and Brannan Streets), and Yerba Buena Gardens (a Redevelopment Agency property at Third and Mission Streets). The nearest public recreation center is the South of Market Recreation Center at Sixth and Folsom Streets, five blocks from the site.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to recreation and public space if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated;
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment; or
- Physically degrade existing recreational resources.

Impact Analysis

The proposed project would provide on-site open space in the form of ground-floor public space for passive recreational use. The project would be located within walking distance of the above-noted parks and open spaces. Thus, project occupants would have convenient access to public open space. With a daytime, non-resident population of approximately 1,640 employees, the project would not substantially increase demand for or use of neighborhood parks, such as South Park, or other facilities such as Yerba Buena Gardens, such that substantial physical deterioration would be expected. The increase in daytime site occupancy that would result from employment at the proposed project would not require the construction of new recreational facilities or the expansion of existing facilities. Therefore, effects on recreation and public space would be less than significant.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

K. Utilities and Service Systems

Setting

The project site is within an urban area that is served by utilities and service systems, including water, wastewater and storm water collection and treatment, solid waste collection and disposal, gas, and electricity.

Water

Water is provided by the San Francisco Public Utilities Commission (SFPUC), which provides both water supply and wastewater collection and treatment. The SFPUC is currently in the process of updating its existing 2005 Urban Water Management Plan. The 2005 Plan did not forecast increased water use within San Francisco because of the anticipated success of ongoing conservation efforts.

Wastewater

The project site is served by San Francisco's combined sewage system. The sewage system is designed to collect and treat both sanitary sewage and rainwater runoff in the same sewer and treatment plants.

Wastewater treatment for the east side of the City is provided primarily by the Southeast Water Pollution Control Plant. The SFPUC is in the process of developing a long-term San Francisco Sewer Master Plan to address the needs of entire wastewater system citywide. In a parallel effort to address more immediate wastewater needs, the SFPUC has initiated an interim five-year capital improvement program to, among other things, reduce the potential for on-street flooding during heavy rains that can occur.¹²¹ In addition, in July 2005, the SFPUC began imposing a new Wastewater Capacity Charge pursuant to SFPUC Resolution No. 05-0045. This Wastewater Capacity Charge is applicable to residential, non-residential and mixed-use types of construction that place new or additional demands on the system. All funds raised through the capacity charge will be directly used to offset the cost of future wastewater capital improvement projects and repairs.

Solid Waste

The California Integrated Waste Management Act of 1989 (AB 939) required municipalities to adopt an Integrated Waste Management Plan (IWMP) to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. Reports filed by the San Francisco Department of the Environment showed the City generated 1.88 million tons of waste material in 2002. Approximately 63 percent (1.18 million tons) was diverted through recycling, composting, reuse, and other efforts while 700,000 tons went to a landfill.¹²² Additionally, the City has a goal to divert most

¹²¹ San Francisco Public Utilities Commission, *Quarterly Report—Third Quarter, Wastewater Enterprise 5-Year Capital Improvement Program*. May 31, 2006; viewed August 24, 2006, on the SFPUC website at: http://sfwater.org/detail.cfm/MC_ID/14/MSC_ID/119/C_ID/3083.

¹²² San Francisco Office of the Controller, *Community Indicators Report*. Available on the internet at: http://www.sfgov.org/wcm_controller/community_indicators/physicalenvironment/index.htm. Accessed March 12, 2009.

(75 percent) of its solid waste (through recycling, composing, etc.) by 2010 and to divert all waste by 2020.¹²³

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to utilities and service systems if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Not have sufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements;
- Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Not comply with federal, state, and local statutes and regulations related to solid waste.

Impact Analysis

The proposed project would add new commercial uses to the site that would increase the demand for utilities and service systems on the site, but not in excess of amounts expected and provided for in the project area.

Water

No new water delivery facilities would be required to serve the proposed project, and the project would not result in a population increase beyond that assumed for planning purposes by the SFPUC.¹²⁴ The proposed project would incrementally increase the demand for water in San Francisco. The new building would be designed to incorporate water-conserving measures, such as installing low-flush toilets and urinals, as required by Chapter 4 of the *California Plumbing Code*. Moreover, as a LEED-certified building, the proposed project would incorporate water-saving and waste management features that would reduce water consumption, wastewater generation, and solid waste generation to levels lower than those of comparable non-LEED-certified structures. Sufficient growth to accommodate the proposed project's residential population was assumed in the SFPUC's 2005 Urban Water Management Plan and an

¹²³ San Francisco Department of the Environment, Zero Waste webpage. Available on the internet at: http://www.sfcenvironment.org/our_programs/program_info.html?ssi=3&ti=#Reports. Accessed March 12, 2009.

¹²⁴ Carlin, Michael. Assistant General Manager, Public Utilities Commission. *Written correspondence*. December 5, 2006.

adequate water supply would be available for the proposed project.¹²⁵ Since the proposed project would have sufficient water supply available from existing entitlements, it would result in a less-than-significant project-specific and cumulative water impact.

Wastewater

No new wastewater collection and treatment facilities would be required to serve the proposed project, and the project would not result in a population increase beyond that assumed for planning purposes by the SFPUC.¹²⁶ The project would meet wastewater pre-treatment requirements of the SFPUC, as required by the San Francisco Industrial Waste Ordinance.¹²⁷ The project site is currently covered almost entirely with impervious surfaces and the proposed project would not create any substantial additional impervious surfaces, resulting in little effect on the total storm water volume discharged through the combined sewer system. While the proposed project would add to sewage flows in the area, it would not cause collection treatment capacity of the sewer system in the City to be exceeded. In light of the above, the proposed project would not exceed wastewater treatment requirements of the Regional Water Quality Control Board and would not require the construction of new wastewater/storm water treatment facilities or expansion of existing ones. Therefore, the proposed project would result in a less-than-significant wastewater impact. Additionally, the project would be subject to the City's Wastewater Capacity Charge.

Furthermore, in 2005, the SFPUC launched a citywide \$150 million 5-Year Wastewater Capital Improvement Program to improve the reliability and efficiency of San Francisco's combined wastewater and storm water system. Implementation to date has addressed many of the most critical needs of the City's aging wastewater system, improving the capacity of sewer mains, upgrading treatment facilities and reducing wastewater odors. The five-year program is a parallel effort to the upcoming San Francisco Sewer System Master Plan, which would provide a long-term plan to address the entire wastewater system. As of December 2008, more than two dozen projects had been completed or were in the final stages of work, and four more projects were in construction.¹²⁸

Solid Waste

Solid waste from the project site would be collected by Golden Gate Disposal Company and hauled to the Norcal transfer station near Candlestick Point, and recycled as feasible, with non-recyclables being disposed of at the Altamont Landfill in Alameda County, where it is required to meet federal, state and local solid waste regulations. The Altamont Landfill has a permitted maximum disposal of 6,000 tons per day and received about 1.31 million tons of waste in 2005 (the most recent year reported by the State). The total permitted capacity of the landfill is more than 124 million cubic yards; with this capacity, the landfill can operate until 2025.¹²⁹ However, the amount of solid waste that San Francisco can deposit at

¹²⁵ Population forecasts relied upon in the Urban Water Management Plan are those projected by the Planning Department in its "Land Use Allocation 2002" database, a modified version of the Association of Bay Area Government's *Projections 2002*.

¹²⁶ Carlin, Michael. See footnote 124, p. 147.

¹²⁷ *San Francisco Public Works Code*, Article 4.1 (amended by Ordinance No. 19-92, January 13, 1992).

¹²⁸ San Francisco Public Utilities Commission, http://sfwater.org/mto_main.cfm/MC_ID/14/MSC_ID/116/MTO_ID/381;http://sfwater.org/msc_main.cfm/MC_ID/14/MSC_ID/120, accessed March 12, 2009.

¹²⁹ California Integrated Waste Management Board, Active Landfill Profiles, Altamont Landfill, <http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=3&FACID=01-AA-0009>, accessed December 6, 2007.

Altamont Landfill is governed by the City's agreement with the landfill operator, and the City is anticipated to reach its current limit between 2013 and 2015. The City is currently reviewing alternatives for longer-term disposal capacity, which may or may not involve continuing disposal at Altamont Landfill. The Department of the Environment anticipates having a new agreement in place by 2010.¹³⁰ Although the proposed project would incrementally increase total waste generation from the City, the increasing rate of diversion through recycling and other methods would result in a decreasing share of total waste that requires deposition into the landfill. Given this, and given the long-term capacity available at the Altamont Landfill, the solid waste generated by project construction and operation would not result in the landfill exceeding its permitted capacity, and the project would result in a less-than-significant solid waste generation impact.

San Francisco Ordinance No. 27-06, which took effect on July 1, 2006, enacted a new Chapter of the Environment Code (Chapter 14) and made amendments to the *Building Code*, the *Health Code* and the *Police Code* in order to establish a comprehensive program to effectuate the City's goals. Ordinance No. 27-06 creates a mandatory program to maximize the recycling of mixed construction and demolition (C&D) debris. The Ordinance requires that mixed C&D debris must be transported off-site by a Registered Transporter and taken to a Registered Facility that can process and divert from landfill a minimum of 65 percent of the material generated from construction, demolition or remodeling projects.

The proposed project would comply with San Francisco Ordinance 27-06. For the reasons discussed above, utilities and service systems would not be adversely affected by the project, individually or cumulatively, and no significant impact would ensue.

The proposed project would increase demand for and use of public services and utilities on the site and increase water consumption, but not in excess of amounts expected and provided for in the project area, and would not be expected to have any significant impact on public services or utilities. In addition, the project would be undertaken in a built-out area of downtown San Francisco, where all utilities and services are currently provided for; no need for any expansion of public utilities or public service facilities is anticipated.

In light of the above, utilities and service systems would not be adversely affected by the project, individually or cumulatively, and no significant effect would ensue.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

¹³⁰ San Francisco Department of the Environment, "Timeline and Analysis: Disposal Alternatives for San Francisco," January 25, 2008. Available on the internet at: http://www.sfenvironment.org/downloads/library/1_salalternativesjanuary2008.pdf. Accessed March 12, 2009.

L. Public Services

Setting

The project site is within an urban area that is served by public services, including fire and police services, public schools, parks, and other services. Police service is provided to the site primarily by the San Francisco Police Department's Southern Station, at 850 Bryant Street, eight blocks from the project site. Fire protection is provided primarily by the three closest fire stations: Station 1, at 676 Howard Street at Third Street (approximately one block); Station 35, at Pier 22½ on the Embarcadero at Harrison Street (approximately three blocks); and Station 8, at 36 Bluxome Street, at Fourth Street (six blocks). Combined, these stations are equipped with three engine companies, two truck companies, two medic units (ambulance), and one fireboat.

The nearest public schools are the middle school campus of Bessie Carmichael School/Filipino Education Center (FEC) at Fourth and Harrison Streets, four blocks southwest of the site; Bessie Carmichael/FEC Elementary at Sherman and Harrison Streets, about seven blocks southwest; Enola Maxwell Middle School at De Haro and Eighteenth Streets, approximately two miles from the site; and Mission High School at Eighteenth and Dolores Streets; approximately three miles away.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to public services if it would:

- Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services.

Impact Analysis

The project would increase development on the site. Thus, the project would increase the demand for, and use of, public services, but not in excess of amounts expected and provided for in this area. As discussed in the previous section, no need for expansion of public services facilities is anticipated due to the proposed project. The proposed project would increase demand for police and fire services, but not in excess of amounts provided for in the project area. The project would not be expected to have a substantial impact on police and fire services and would not necessitate the need for new or physically altered governmental facilities.

Based on the citywide student generation rate employed by the San Francisco Unified School District (SFUSD) of 0.125 students per dwelling unit and the assumptions in Section IV.C, Population and Housing, the project would potentially generate up to about 70 students. Given that enrollment in the SFUSD has generally been declining for several years, this number of additional new students would not

require new school facilities, and it is anticipated that all new students could be accommodated by existing schools under the jurisdiction of the SFUSD. Therefore, the proposed project would not result in a significant environmental effect on schools. Like all new development, the project would be required to pay one-time school impact fees under Government Code Section 65995(b)(3).

The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), restricts the ability of local agencies such as the City of San Francisco to deny land use approvals on the basis that public school facilities are inadequate. SB 50 establishes the base amount of allowable developer fees at \$2.63 per square foot of residential construction and \$0.42 per square foot of commercial construction as of 2006. These fees are intended to address local school facility needs resulting from new development. Public school districts can, however, impose higher fees provided they meet the conditions outlined in the act.

The incremental daytime non-residential population growth that would result from the proposed project and the new retail space that would be included in the project would not necessitate the need for new or physically altered parks or other governmental facilities.

In light of the above, public services would not be adversely affected by the project, individually or cumulatively, and no significant effect would ensue.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

M. Biological Resources

Setting

The project site and the majority of the area around the project site is developed and covered with structures and other impermeable surfaces. There are no trees located on the project site; only minimal landscaping exists to screen the existing parking lot from the adjacent streets and sidewalks. The project site contains no wetlands, nor have rare, threatened, or endangered species been observed at the site. There are no adopted habitat conservation plans applicable to the project site.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impact Analysis

Because the project site is in a developed urban area and is almost completely covered by impermeable surface, the proposed project would not affect any rare plants or possible animal habitats, including riparian habitat or wetlands. No rare, threatened, or endangered species would be affected by the proposed project, nor would the implementation of any habitat conservation plans or other similar plans be adversely affected.

Based on the above, the project would not result in any significant effect with regard to biology, nor would the project contribute to any potential cumulative effects on biological resources.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

N. Geology, Soils, and Seismicity

Setting

The *San Francisco General Plan* Community Safety Element contains maps that show areas of the City subject to geologic hazards. The project site is located in an area subject to “strong” to “very strong” groundshaking (Modified Mercalli Intensity VII to VIII) from a characteristic earthquake along the Peninsula segment of the San Andreas Fault and the northern Hayward Fault (Maps 2 and 3 of the Community Safety Element, as updated by the Association of Bay Area Governments (ABAG) in 2003).¹³¹ As shown on the official State of California Seismic Hazards Zone Map for San Francisco prepared under the Seismic Hazards Mapping Act of 1990,¹³² the project site lies within a seismic hazard zone for liquefaction. However, the project site is not in an area subject to landslide (Map 5 of the Community Safety Element). The project site is not in an area subject to tsunami run-up, or reservoir inundation hazards (Maps 6 and 7 of the Community Safety Element).

The project site is not in an Alquist-Priolo Special Studies Zone, and no known active fault exists on or in the immediate vicinity of the site.¹³³ The potential for surface fault rupture at the site is extremely low. The closest active faults are the San Andreas Fault, approximately 8 miles southwest of the project site, and the North Hayward Fault, about 10 miles west of the project site. Like the entire San Francisco Bay Area, the project site is subject to ground shaking in the event of an earthquake on the regional faults.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to geology, soils, and seismicity if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - » Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.);
 - » Strong seismic ground shaking;

¹³¹ Continued research has resulted in revisions to ABAG’s earthquake hazard maps. Available on ABAG website (viewed December 3, 2005) at: <http://www.abag.ca.gov/bayarea/eqmaps/mapsba.html>. Updated Shaking Hazard Maps depict intensity of ground shaking, rather than estimated damage. Based on the 1995 ABAG report, an earthquake on these faults could result in “nonstructural” to “moderate” damage in the project vicinity.

¹³² The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones.

¹³³ California State Department of Conservation, Division of Mines and Geology (CDMG) *Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of May 1, 1999*, [<http://www.consrv.ca.gov/CGS/rghm/ap/affected.htm>], accessed September 6, 2006, and CDMG, *Fault Rupture Hazard Zones in California* Alquist Priolo Earthquake Zoning Act, Special Publication 42, Revised 1997.

- » Seismic-related ground failure, including liquefaction; or
- » Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Be located on expansive soil, as defined in the California Building Code, creating substantial risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater;
- Change substantially the topography or any unique geologic or physical features of the site.

Impact Analysis

Septic systems are not employed in San Francisco, and therefore this issue requires no further discussion.

A geotechnical due diligence study was performed for the proposed project and is summarized here.¹³⁴ The purpose of the geotechnical investigation was to explore subsurface conditions and develop recommendations regarding the geotechnical aspects of project design and construction. Based on available subsurface information, the project site is likely blanketed by up to 6 feet of fill underlain by 10 to 17 feet of loose to dense sand known as Dune Sand. Below the Dune Sand is a 3- to 10-foot layer of Marsh deposits, a moderately compressible clay layer (primarily stiff clay and sandy clay but may contain organic material), and below this layer is a layer of relatively strong and incompressible Colma Sand capable of supporting building loads without excessive settlement. Thus, a mat foundation would be sufficient to support the proposed building. Bedrock layers at the project site probably exist at an elevation between -150 and -160 feet (approximately 165 to 175 feet below grade at the northern [Howard Street] end of the site). Previous geotechnical investigations on the project site have encountered groundwater at as little as 22 feet below grade (approximately elevation -7 feet). More recent investigations at neighboring sites encountered groundwater at an elevation of -3 feet. Groundwater is thus expected to be encountered at elevation of -2 feet on the project site, or about 17 feet below grade. Excavation to a depth of approximately 30 feet (-15 feet elevation) would be required to accommodate the proposed two level basement and mat foundation. The geotechnical investigation, therefore, recommends groundwater be drawn down at least 33 feet below grade, three feet from the bottom of the excavation. Dewatering would thus be required during construction.

According to the geotechnical due diligence study, although the site is within a seismic hazard zone for liquefaction, as defined by the Seismic Hazards Mapping Act, sand layers below the water table have sufficient relative densities and/or clay contents to resist liquefaction. Typically the soil layers of concern for liquefaction are uncontrolled sandy fill and loose to medium dense native sand, below the groundwater level. Due to the nature of soil conditions at the project site, a mat foundation would be sufficient to support the proposed structure.

¹³⁴ Treadwell & Rollo, *Geotechnical Due Diligence Study*; see footnote 69, p. 93

The geotechnical investigation concluded that the potential for surface faulting at the project site is very low. Surface faulting and consequent secondary ground failure are unlikely in areas not within designated Earthquake Fault Zones. The project site is not within a designated earthquake fault zone, and no known active or potentially active faults exist on the site.

The primary geotechnical concerns, as identified in the geotechnical report, are: the presence of Marsh deposits near the proposed depth of excavation, which may yield and would therefore not provide adequate foundational support; the presence of potentially sensitive utility lines in Second Street; and supporting the excavation during dewatering and construction of the basement. The report included recommendations to address these potential hazards, which include: over excavation of Marsh deposits and replacement with lean concrete or engineered fill; stiffer shoring systems to reduce vertical and lateral movements in Second Street; and soil cement columns to control water intrusion during basement excavation. The project sponsor would follow the recommendations of the final geotechnical report.

Other than excavation beneath the site to accommodate the proposed basement and parking levels, the proposed project would not alter the topography of the site, nor alter any unique geographic feature, nor would the project result in the substantial erosion of topsoil.

The final building plans would be reviewed by the Department of Building Inspection (DBI). In reviewing building plans, the DBI refers to a variety of information sources to determine existing hazards and assess requirements for mitigation. Sources reviewed include maps of Special Geologic Study Areas and known landslide areas in San Francisco as well as the building inspectors' working knowledge of areas of special geologic concern. Potential geologic hazards would be mitigated during the permit review process through these measures. As with any development proposal in an area of liquefaction potential, the DBI will, in its review of the building permit application, require the project sponsor to prepare a geotechnical report that assesses the nature and severity of the hazard(s) on the site and recommends project design and construction features that would reduce the hazards(s). To ensure compliance with all *San Francisco Building Code* provisions regarding structural safety, when DBI reviews the geotechnical report and building plans for a proposed project, it will determine the adequacy of necessary engineering and design features to reduce the potential damage to structures from groundshaking and liquefaction. Therefore, potential damage to structures from geologic hazards on the project site would be ameliorated through the DBI requirement for a geotechnical report and review of the building permit application. Any changes incorporated into the foundation design required to meet the *San Francisco Building Code* standards that are identified as a result of the DBI permit review process would constitute minor modifications of the project and would not require additional environmental analysis.

The proposed Caltrain Downtown Extension would involve the construction of a subway tunnel leading to the Transbay Terminal and passing beneath Second Street immediately to the east of the project site. Up to 50 feet of soil sediments consisting of fill, Bay Mud, and loose to medium dense marine sands would be encountered at this location which could potentially affect non-seismic settlement beneath portions of the subway. The low strength and moderate deformation characteristics of Bay Mud could affect the stability of the tunnel, the amount of ground deformation caused by the excavations, and the resulting effects on adjacent structures, including the building at 222 Second Street. Prior to the start of

cut-and-cover construction along the Caltrain alignment beneath Second Street, the Caltrain project contractor would ensure that support for foundations of adjacent buildings is adequate. Control of potential movement of adjacent structures is anticipated to be accomplished by use of excavation support systems, which, in conjunction with proper excavation and bracing or tie-back procedures, can serve as protection for the adjacent structures. This is common practice for the Bay Area and was successfully used for the Muni Metro Turnaround project at the east end of Market Street.¹³⁵ If the proposed 222 Second Street project is built prior to the start of construction on the Caltrain extension, the Caltrain project would undertake appropriate shoring of the cut-and-cover excavation adjacent to the project site, as would be the case with Caltrain construction adjacent to other structures. Should the order of construction be reversed (or the two projects proceed simultaneously), construction of the proposed 222 Second Street project would have to be undertaken without installation of tiebacks or other excavation shoring devices that would extend into the Caltrain right-of-way. In either case, construction of the proposed project would be undertaken in coordination with the Transbay Joint Powers Authority and the Peninsula Corridor Joint Powers Board, which will oversee the new Transit Center and the Caltrain extension, respectively. Accordingly, it is not anticipated that the Caltrain Downtown Extension project would result in adverse effects on adjacent structures, including the proposed 222 Second Street building.

In light of the above, the proposed project would not result in a significant effect related to geology, either individually or cumulatively.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

¹³⁵ Information on Caltrain Downtown Extension construction from: Federal Transit Administration, City and County of San Francisco, Peninsula Corridor Joint Powers Board, and San Francisco Redevelopment Agency, *Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project Final EIS/EIR*, March 2004; Case No. 2000.048E; p. 5-79 and p. 5-169. This document is available online at: <http://www.transbaycenter.org/TransBay/content.aspx?id=114>.

O. Hydrology and Water Quality

Setting

The project site is currently completely covered by paved and impermeable surfaces, as it is completely occupied by the existing parking lot (and, in the case of the area proposed to be added to the site, by the existing loading dock for the adjacent 631 Howard Street building). Stormwater runoff from the project site flows directly, as sheet flow, to the City's combined sewage system via storm drains located at the intersection of Second and Howard Streets. The combined sewage system is designed to collect and treat both sanitary sewage and rainwater runoff in the same sewer and treatment plants. Wastewater treatment for the east side of the City, including the project site, is provided primarily by the Southeast Water Pollution Control Plant, located in the Bayview-Hunters Point district.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

Impact Analysis

The project would not change the amount of impervious surface area nor measurably affect current runoff or groundwater. Therefore, neither groundwater resources nor runoff and drainage would be adversely affected. As noted in Section IV.N, Geology, Soils, and Seismicity, the project site is not in an area subject to tsunami run-up, or reservoir inundation hazards (Maps 6 and 7 of the Community Safety Element).

Construction of the proposed garage, which would be below grade, would require excavation to an estimated average depth of about 25 feet, according to the project sponsor. The geotechnical investigation indicates a potential maximum depth of excavation of about 30 feet. Based on the reported groundwater level of 15 to 20 feet below grade,¹³⁶ dewatering appears likely.

Any groundwater encountered during construction of the proposed project would be subject to requirements of the City's Industrial Waste Ordinance (Ordinance Number 199-77), requiring that groundwater meet specified water quality standards before it may be discharged into the sewer system. The Bureau of Environmental Regulation and Management of the San Francisco Public Utilities Commission must be notified of projects necessitating dewatering, and may require water analysis before discharge. Should dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the report would contain a determination as to whether or not a lateral movement and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the *Building Code*) be retained by the project sponsor to perform this monitoring.

Groundwater observation wells would be installed to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable movement were to occur during dewatering, groundwater recharge would be used to halt this settlement. Costs for the survey and any necessary repairs to service lines under the street would be borne by the project sponsor.

Development in the City and County of San Francisco must account for flooding potential. Areas located on fill or bay mud can subside to a point at which the sewers do not drain freely during a storm (and sometimes during dry weather) and there can be backups or flooding near these streets and sewers. The proposed project falls within a seismic hazard zone for liquefaction, as defined by the Seismic Hazards Mapping Act (see Section IV.O, Geology, Soils, and Seismicity),¹³⁷ at an elevation of approximately 14 feet, San Francisco City Datum (SFD). The basement (garage) levels would be located below an elevation of 0, SFD.

The City has implemented a review process to avoid flooding problems caused by the relative elevation of the structure to the hydraulic grade line in the sewers. Applicants for building permits for either new construction, change of use (through the Planning Department) or change of occupancy (through the

¹³⁶ Treadwell & Rollo, *Geotechnical Due Diligence Study*; see footnote 69, p. 93

¹³⁷ As noted in Section IV.O, although the site is within a seismic hazard zone for liquefaction, sand layers below the water table have sufficient relative densities and/or clay contents to resist liquefaction.

Department of Building Inspection), or for major alterations or enlargements are referred to the San Francisco Public Utilities Commission (SFPUC) for a determination of whether the project would result in ground-level flooding during storms. The side sewer connection permits for such projects—including the proposed 222 Second Street project—must be reviewed and approved by the SFPUC at the beginning of the review process for all permit applications submitted to the Planning Department, the Department of Building Inspection, or the Redevelopment Agency. The SFPUC and/or its delegate (Department of Public Works, Hydraulics Section) will review the permit application and comment on the proposed application and the potential for flooding during wet weather. The SFPUC will receive and return the application within a two-week period from date of receipt. The permit applicant shall refer to SFPUC requirements for information required for the review of projects in flood-prone areas. Requirements may include provision of a pump station for the sewage flow, raised elevation of entryways, and/or special sidewalk construction and the provision of deep gutters.

As required, the sponsor for the proposed project would coordinate a review with SFPUC in order to determine if the project would result in ground-level flooding during storms and will incorporate any required design measures, as applicable. Therefore, the project would result in less-than-significant impact on wastewater systems, with respect to potential effects of flooding and ground subsidence.

Maps published by the Bay Conservation and Development Commission (BCDC) indicate that, with a potential sea level rise of 55 inches (4.6 feet)—the anticipated rise in sea level by 2100 due to global warming—areas of San Francisco along the Bay shoreline could be inundated.¹³⁸ However, the areas of potential inundation indicated on the BCDC maps do not include the project site. Nevertheless, as discussed in Section IV.G, Air Quality, continued emissions of greenhouse gases and the associated increase in global warming can be expected to have serious consequences for San Francisco, the Bay Area, California, and beyond.

In light of the above, effects related to water resources would not be significant, either individually or cumulatively.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

¹³⁸ Bay Conservation and Development Commission, “Shoreline Areas Vulnerable to Sea Level Rise: Central Bay.” Available on the internet at: http://www.bcdc.ca.gov/planning/climate_change/climate_change.shtml.

P. Hazards and Hazardous Materials

Setting

Hazardous Building Materials

The one existing structure on the project site is a small parking attendant kiosk, which does not contain any materials that would pose a potential hazard during its demolition. On the adjacent expansion site, where the project would result in demolition of the loading dock behind 631 Howard Street, hazardous building materials could be present, including lead-based paint and asbestos, given that the loading dock was built in approximately 1949, when use of these materials was common in construction. The removal of such materials is regulated as described below by Chapter 34 of the *San Francisco Building Code* and Section 19827.5 of the *California Health and Safety Code*, respectively.

Lead-based Paint

Lead was detected in a paint survey in May 2000 in exterior paint on the entire northeast and southwest portions of the existing building, covering an approximate area of 2,000 square feet.

Work that could result in disturbance of lead paint must comply with Section 3423 of the *San Francisco Building Code*, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures. Where there is any work that may disturb or remove lead paint on the exterior of any building built prior to December 31, 1978, Section 3423 requires specific notification and work standards, and identifies prohibited work methods and penalties. (The reader may be familiar with notices commonly placed on residential and other buildings in San Francisco that are undergoing re-painting. Generally affixed to a drape that covers all or portions of a building, these notices are a required part of the Section 3423 notification procedure.)

Section 3423 applies to the exterior of all buildings or steel structures on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces, unless demonstrated otherwise through laboratory analysis), and to the interior of residential buildings, hotels, and childcare centers. The ordinance contains performance standards, including establishment of containment barriers, at least as effective at protecting human health and the environment as those in the HUD Guidelines (the most recent Guidelines for Evaluation and Control of Lead-Based Paint Hazards) and identifies prohibited practices that may not be used in disturbances or removal of lead-based paint. Any person performing work subject to the ordinance shall, to the maximum extent possible, protect the ground from contamination during exterior work; protect floors and other horizontal surfaces from work debris during interior work; and make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work. Clean-up standards require the removal of visible work debris, including the use of a High Efficiency Particulate Air Filter (HEPA) vacuum following interior work.

The ordinance also includes notification requirements and requirements for signs. Prior to the commencement of work, the responsible party must provide written notice to the Director of the

Department of Building Inspection (DBI) of the address and location of the project; the scope of work, including specific location; methods and tools to be used; the approximate age of the structure; anticipated job start and completion dates for the work; whether the building is residential or nonresidential, owner-occupied or rental property; the dates by which the responsible party has or will fulfill any tenant or adjacent property notification requirements; and the name, address, telephone number, and pager number of the party who will perform the work. (Further requirements include a sign when containment is required, notice to occupants, availability of a pamphlet related to protection from lead in the home, and early commencement of work [requested by tenant].) The ordinance contains provisions regarding inspection and sampling for compliance by DBI, and enforcement, and describes penalties for non-compliance with the requirements of the ordinance.

Asbestos

Section 19827.5 of the *California Health and Safety Code* requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable Federal regulations regarding hazardous air pollutants, including asbestos. The Bay Area Air Quality Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work.

Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/alterd including size, age and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition or abatement; nature of planned work and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. The District randomly inspects asbestos removal operations. In addition, the District will inspect any removal operation when a complaint has been received.

The local office of the State Occupational Safety and Health Administration (OSHA) must be notified of asbestos abatement to be carried out. Asbestos abatement contractors must follow state regulations contained in 8CCR1529 and 8CCR341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. The contractor and hauler of the material are required to file a Hazardous Waste Manifest which details the hauling of the material from the site and the disposal of it. Pursuant to California law, the DBI would not issue the required permit until the applicant has complied with the notice and abatement requirements described above. The loading dock could contain asbestos both internally and on the roof, as asbestos was historically commonly used in floor tile mastic and roofing tar and patching materials. Prior to demolition of the loading dock, the project sponsor would be required to obtain an asbestos survey of the loading dock and to comply with state and local asbestos removal requirements, as applicable depending on the results of the survey.

Prior Uses of the Site

A Phase I environmental site assessment conducted for the project site¹³⁹ identifies the previous use of the site as an auto service center and refers to the removal of four abandoned tanks under the sidewalk at the extreme eastern end of the site on July 31, 1975. The Phase I site assessment also refers to a ground water sampling report for the subject property undertaken by Romig Consulting Engineers (Romig) and dated August 6, 1999, indicating ground water at the site was affected by a limited amount of degraded gasoline and benzene, toluene, ethylene, and xylenes (BTEX) compounds remaining from the underground storage tank and piping removal. However, according to Romig, the low levels of hydrocarbons did not warrant ground water clean up. Ground water monitoring wells were removed from the subject property in September 2006, and a “No Further Action” letter was subsequently issued to the subject property by the San Francisco Department of Public Health.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving fires.

A project would also normally result in a significant impact with respect to hazards and hazardous materials if it would be located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, and would result in a safety hazard for people residing or working in the project area. Additionally, for a project located in the vicinity of a private airstrip, the project would normally have a significant effect if it would result in a safety hazard for people residing or working in the project area. The project site is not within an airport land use plan area, nor is it in the vicinity of a private airstrip; therefore, these are not applicable.

¹³⁹ Hillmann Environmental Group, LLC. *Phase I Environmental Site Assessment; Parking Lot 222 2nd Street, San Francisco, Ca.* October 16, 2006. This report is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

Impact Analysis

Hazardous Materials Use in the Project

As an office and retail building, the proposed project could employ small quantities of common household hazardous materials such as solvents and cleaners. However, the project would not generate substantial hazardous emissions, nor would it include the use of acutely hazardous materials, and therefore, there would be no adverse effect on the nearby child care center at 75 Hawthorne Street, located on the project block, nor to the general public.

Hazardous Building Materials

Because the parking attendant kiosk on the project site does not contain any materials that would pose a potential hazard during its demolition, the potential impacts of hazardous building materials from demolition of this structure are less than significant. Potential impacts related to demolition of the loading dock behind the 631 Howard Street building would be reduced to a less-than-significant level through compliance with existing laws and regulations. Therefore, no significant impacts related to hazardous building materials would result from the proposed project, and not mitigation measures are required.

Prior Uses of the Site

Because the Phase I site assessment found that underground tanks previously located beneath the site had been removed, because groundwater contamination did not warrant cleanup, and because a "No Further Action" letter has been issued for the site by the Department of Public Health, the project would not result in any significant impacts with regard to prior uses of hazardous materials at the site. The project site is not on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Fire Hazards; Emergency Response or Evacuation Plans

San Francisco ensures fire safety primarily through provisions of the *Building Code* and the *Fire Code*. Existing and new buildings are required to meet standards contained in these codes. In addition, the final building plans would be reviewed by the San Francisco Fire Department (as well as the Department of Building Inspection), in order to ensure conformance with these provisions. The proposed project would conform to these standards, which (depending on the building type) may also include development of an emergency procedure manual and an exit drill plan. In this way, potential fire hazards would be mitigated during the permit review process.

Occupants of the proposed building would contribute to congestion if an emergency evacuation of the South of Market District were required. The California Health and Safety Code (CCR, Title 19, Section 3.09) requires emergency planning and information for all office buildings two or more stories in height, hotels, motels, lodging houses, high-rise office buildings, and apartment houses two or more stories in height that contain three or more dwelling units. Additionally, project construction would have to conform to the provisions of the *Building Code* and *Fire Code*, which require additional life-safety protections for high-rise buildings.

In light of the above, project effects related to hazards and hazardous materials would not be significant, either individually or cumulatively.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

Q. Mineral and Energy Resources

Setting

The project site is in a built-out urban area with no known mineral resources.

Energy use at the site at present is minimal, given that the site is currently used for surface parking and the expansion site, where the 631 Howard Street loading dock is located, is used primarily for parking of a single vehicle.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to mineral and energy resources if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state;
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan; or
- Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner.

Impact Analysis

The project would be located on an urban infill site. The project would not require quarrying, mining, dredging, or extraction of locally important mineral resources on site, nor would it deplete any nonrenewable natural resources. Therefore, the project would have no effect on mineral resources.

All land in San Francisco, including the project site, is designated Mineral Resource Zone 4 (MRZ-4) by the California Division of Mines and Geology (CDMG) under the Surface Mining and Reclamation Act of 1975 (CDMG, Open File Report 96-03 and Special Report 146 Parts I and II). This designation indicates that there is inadequate information available for assignment to any other MRZ and thus the site is not a designated area of significant mineral deposits. Since the project site is already developed, future evaluation or designation of the site would not affect or be affected by the proposed project. There are no operational mineral resource recovery sites in the project area whose operations or accessibility would be affected by the construction or operation of the proposed project.

The proposed project would include new off and restaurant/retail space and parking. Development of these uses would not result in large amounts of fuel, water, or energy in the context of energy use throughout the City and region. The project demand would be typical for a project of this scope and nature and would meet, or exceed, the current state and local codes and standards concerning energy consumption, including Title 24 of the *California Code of Regulations*. Documentation showing compliance with these standards is submitted with the application for the building permit. Title 24 is

enforced by the DBI. Moreover, as a LEED-certified building, the proposed project would incorporate energy-saving features that would reduce energy consumption to levels lower than those of comparable non-LEED-certified structures. Because the proposed project would meet current state and local codes concerning energy consumption and would not cause a wasteful use of energy, and because of the project's stated goal of LEED certification, effects related to energy consumption would not be considered significant.

In light of the above, the proposed project would not result in a significant effect with regard to mineral and energy resources.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

R. Agricultural and Forest Resources

Setting

The project site is located in a built-out urban area and there are no agricultural or farmland resources, nor any forested lands, located on or near the project site. The site is not zoned for agricultural use nor is it within a Williamson Act contract.

Impacts

Significance Criteria

The proposed project would result in a significant impact with respect to mineral and energy resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural or forestry use, or a Williamson Act contract; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland of Statewide Importance, to non-agricultural use.

Impact Analysis

Inasmuch as the proposed project would be developed in an urban area with no agricultural, farmland, or forestry resources in the vicinity, the project would not result in the conversion of farmland to non-agricultural uses, nor would it convert any forest land to non-forest use.

Therefore, the project would have no effect on agricultural resources.

Mitigation and Improvement Measures

Because no significant impacts are identified in the above analysis, no mitigation is required.

CHAPTER V

Other CEQA Considerations

A. Growth Inducement

In general, a project would be considered growth-inducing if its implementation would result in substantial population increases and/or new development in other nearby areas that might not occur if the project were not approved and implemented, particularly if the project would facilitate growth by removing a major obstacle to development in a particular area (such as by provision of major new public services to an area where those services are not currently available). The proposed project would consist of development of a single office tower on a site currently in use as a surface parking lot, in a heavily developed area of downtown San Francisco, in a manner consistent with the Downtown Plan and existing zoning on the site. The proposed project would not necessitate or induce the extension of municipal infrastructure. The project would be constructed in an area that makes up the City's South Financial District and has also been the location of recent residential projects. As such, the proposed project would not be expected to substantially alter development patterns in Downtown or elsewhere in San Francisco. The site is also near the focus of continuing high-density residential development on Rincon Hill. As a result, the project could potentially provide employment for some nearby residents.

The proposed project would consist of infill in a developed urban area, with services and transit available, and could be considered a response to the increasing mixed-use character of the project vicinity, as much as a potential inducement to further growth. To the extent that employees in the project's new office tower were to live nearby, the project would result in substantially less impact on transportation systems and air quality than would development of a similar amount of office space in a more outlying part of the Bay Area where fewer services and less transit access is provided. Moreover, the proposed project would be developed in an existing established employment center—downtown San Francisco—that is served by existing infrastructure, including transit. That is, the project would not create a substantial concentration of new employment in an area that is lacking basic services that would have to be newly provided for.

In view of the above, there is no reason to conclude that the project would result in substantial additional development in the project site vicinity that would not otherwise occur, and the project thus would not result in substantial inducement to further growth.

B. Significant Environmental Effects that Cannot Be Avoided if the Proposed Project Is Implemented

In accordance with Section 21067 of the California Environmental Quality Act (CEQA), and with Sections 15040, 15081 and 15082 of the State CEQA Guidelines, potential impacts that could not be eliminated or reduced to an insignificant level are limited to transportation effects.

Transportation

The proposed project would result in a significant impact at the intersection of Harrison/Second Streets, Although the addition of project traffic would not alter the existing level of service (LOS) , which would remain at an unacceptable LOS E for the intersection overall, project traffic would constitute about 16 percent of the southbound left turn volume (which would operate with unacceptable LOS F conditions), and the increased delay at this intersection would constitute a significant project traffic impact. No feasible mitigation is available for this impact; the unacceptable LOS is primarily the result of heavy traffic flow to the Bay Bridge in the p.m. peak hour.

In addition, the proposed project's contribution to future traffic growth at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets would constitute a cumulatively considerable contribution to adverse 2025 cumulative traffic conditions, and would be considered a significant impact. That determination was reached based on the examination of the traffic volumes for the vehicle movements that determine the overall level of service performance at the intersections projected to operate at LOS E or F under 2025 cumulative conditions. The project would add substantial numbers of vehicles to turning movements that determine the overall LOS F performance (i.e., "critical" movements) at these four intersections.

No feasible mitigation is available for the cumulative impacts at the above four intersections, as each intersection is already signalized. Therefore, this impact would be significant and unavoidable.

No other significant impacts were identified that could not be mitigated to a less-than-significant level.

C. Significant Irreversible Environmental Changes That Would Result if the Proposed Project is Implemented

In accordance with Section 21100(b)(2)(B) of CEQA, and Section 15126.2(c) of the CEQA Guidelines, an EIR must identify any significant irreversible environmental changes that could result from implementation of the proposed project. This may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. According to the CEQA Guidelines, irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

In general, such irreversible commitments include resources such as energy consumed and construction materials used in construction of a proposed project, as well as the energy and natural resources (notably

water) that would be required to sustain a project and its inhabitants or occupants over the usable life of the project. This latter commitment of resources to project operation essentially assumes that residents or occupants would not require a similar commitment but for the proposed project; that is, in the case of the 222 Second Street project, occupants of the proposed office space would not work in San Francisco, and perhaps would not live in the Bay Area, unless the project were constructed. Such a condition is unlikely (because other office space is, and will continue to be available in the City and because a limited number of employees in any given building are likely to relocate to the area as a result of their employment), although the assumption is consistent with similar conservative assumptions underlying the rest of the analyses in the EIR (c.g., that trips generated by workers in the proposed project would not occur in downtown San Francisco unless the project were constructed).

In this light, it can be said that the proposed project would intensify development at the project site and in the vicinity, although as noted elsewhere in this EIR, the project would be consistent with land use and development patterns in the built-out urban environment that characterizes downtown San Francisco. The project would commit future generations to an irreversible commitment of energy, primarily in the form of fossil fuels (unless substantially replaced at some point in the future) for heating and cooling of the building, for automobile and truck fuel, and for energy production for lighting, computers, and other equipment in the building. The project would also require an ongoing commitment of potable water for building occupants. Additionally, the project would use fossil fuel during demolition of the existing parking lot and adjacent building loading dock and in construction of the proposed project. Construction would also require the commitment of construction materials, such as steel, aluminum, and other metals, concrete, masonry, lumber, sand and gravel, and other such materials, as well as water. Because the project would comply with California Code of Regulations Title 24 and is intended to be LEED Gold certified, it would be expected to use less energy and water over the lifetime of the proposed building than a comparable non-certified structure, and would not use energy or water in a wasteful manner.

D. Areas of Known Controversy and Issues to Be Resolved

On the basis of public comments on the NOP, potential areas of controversy and unresolved issues for this project include effects on traffic, transit, and parking; compatibility with surrounding development; noise and air quality impacts of construction, including cumulative construction impacts; and seismic safety. These issues are discussed in this EIR.

CHAPTER VI

Alternatives to the Proposed Project

This chapter identifies alternatives to the proposed project and discusses environmental impacts associated with each alternative. Project decision-makers could adopt any of the following alternatives, if feasible, instead of approving the proposed project.

A. Alternative A: No Project

Description

This alternative would entail no change to the site, which would remain in its existing condition. The existing parking lot and loading dock at the adjacent 631 Howard Street building would continue to operate for the foreseeable future.

Impacts

Under this alternative, the project impacts that are described in Chapter IV would not occur. In particular, there would be no significant traffic impact, including cumulative impacts; although three study intersections that currently operate at Level of Service (LOS) E or F would continue to do so, this alternative would make no contribution to this impact. With no excavation, this alternative would avoid the project's significant but mitigable effect on archeological resources. Under this alternative, no new structure would be built, and this alternative would therefore avoid the project's less-than-significant impacts on aesthetics, historical resources, shadow, and wind. Also, this alternative would result in no emissions of criteria pollutants, and would avoid the project's less-than-significant impacts on air quality. Additionally, none of the other less-than-significant impacts identified in Chapter IV would transpire under this alternative.

This alternative would not result in any new significant impacts that would not arise with the proposed project.

B. Compliance with Planning Code Bulk Limits

Description

Under this alternative, an office tower would be built at essentially the same density as with the proposed project (i.e., the office and retail floor area would be virtually the same as that with the project and the same number of auto and bicycle parking spaces would be provided). However, this alternative would entail construction of a 27-story building, compared to 26 stories with the proposed project, and the shape

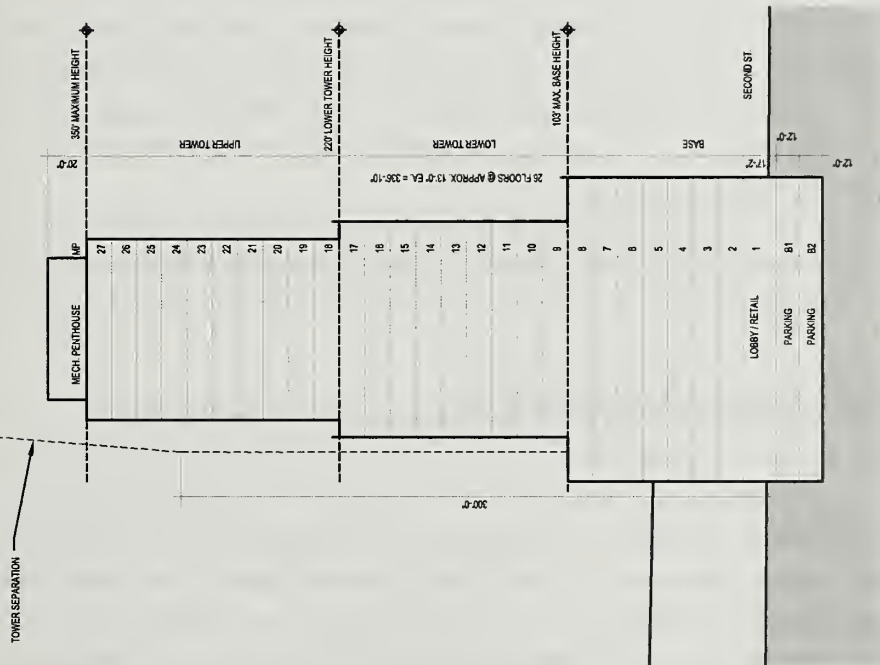
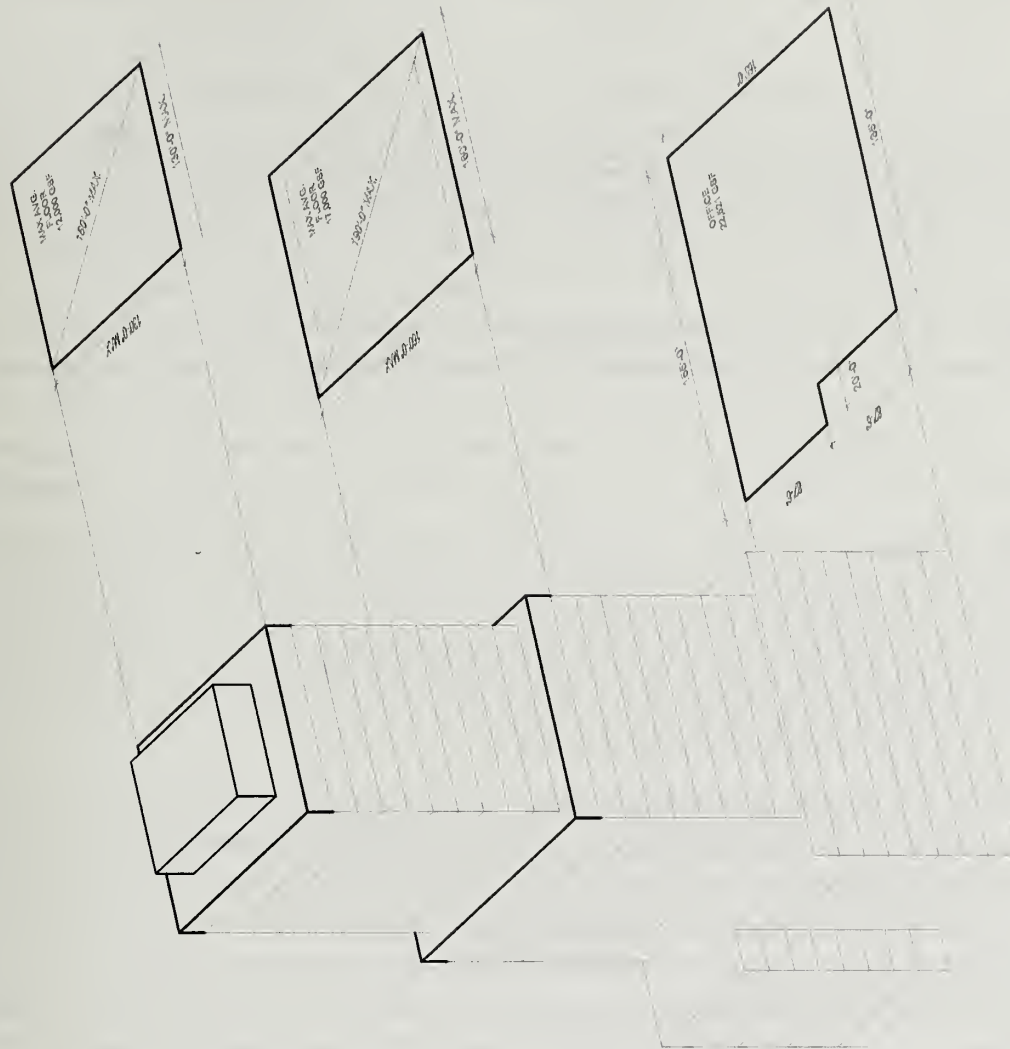
of the building would be tailored to the Downtown Plan bulk limits (as set forth in the controls for the “S” bulk district in which the project site is located). The office tower under this alternative would consist of three elements, as with the project, but the lower tower would have floor plates about 15 percent smaller than those of the project. Thus, this alternative would have an eight-story base that would occupy the entire project site and be 103 feet tall, the maximum permitted under the *Planning Code*, compared to the approximately 60-foot height of the base element with the proposed project; a nine-story lower tower, which would have floor plates of 17,000 gross square feet, almost 25 percent smaller than the base; and a 10-story upper tower, with floor plates of 12,000 gross square feet, almost 30 percent smaller than those of the lower tower (less than 55 percent as large as the floor plates of the base). To achieve the relative bulk reductions, the lower tower would be set back from the building base on all four sides, and there would be additional setbacks at the upper tower. Like the proposed project, this alternative would have a 20-foot-tall mechanical penthouse. Also like the proposed project, this alternative would have a two-way entrance ramp to the basement parking levels on Howard Street. Open space would be provided at the floors where the lower and upper towers would be set back (floors 9 and 18), as opposed to the ground-floor open space in the proposed project.

The height of the tower under this alternative would be the same as that of the proposed project—approximately 350 feet plus mechanical levels—because, while this alternative would have one additional story, the floor-to-floor heights would be reduced by 4 inches (in the upper and lower towers) to 6 inches (in the eight-story base), compared to those of the proposed project. In addition, the ground floor would be several feet shorter than the double-height lobby proposed with the project. Therefore, this alternative, unlike the proposed project (which requires rezoning and a *General Plan* map amendment for height), would comply with the 350-foot height limit that applies to most of the project site.¹⁴⁰ Figure 23 depicts a massing diagram of this alternative.

As a result of the differences in tower bulk compared to the proposed project, this alternative would not require an exception under *Planning Code* Section 309 to the bulk controls of Section 270, as would the proposed project. Like the proposed project, this alternative would require an exception to the ground-level wind current requirements (Section 148) because this alternative, like the project, would not be expected to reduce existing exceedances of the pedestrian wind speed criterion. Although this alternative would comply with the bulk controls in Section 270, it would, like the project, require an exception to requirement of Section 146 that the building shape be defined by a plane sloping away from Second Street at a prescribed angle above a specified height.

As with the proposed project, this alternative would include acquisition of a portion of the adjacent 631 Howard Street parcel and demolition of the concrete loading dock on that site.

¹⁴⁰ The northwest corner of the site, where the height limit is 150 feet, would be occupied only by the eight-story, 103-foot-tall base of the tower structure under this alternative.



SOURCES: Thomas Philier and Partners; Heller Manus Architects

Case No. 2006.1106E: 222 2nd Street (206337)
Figure 23
 Height and Bulk Compliance Alternative

Impacts

Effects of this alternative would be the same as or similar to those of the proposed project. Effects related to the intensity of development, including transportation effects and effects on air quality, would be the same as those of the proposed project. Like the proposed project, this alternative would have a significant, unmitigable impact on intersection level of service at the intersection of Second and Harrison Streets, and would contribute considerably to significant cumulative traffic impacts at the intersections of Howard/Third Streets, Howard/New Montgomery Streets, Folsom/Second Streets, and Harrison/Second Streets, which likewise could not be mitigated. Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project; operational air quality and noise impacts would be less than significant, also as with the project. Other less-than-significant impacts discussed in Chapter IV and related to the intensity of development, including effects on population and housing, recreation and public space, utilities and service systems, and public services, would be the same under this alternative as with the project, and would be less than significant. Effects related to conditions at the project site, including impacts on geology, hydrology, biology, hazards, mineral/energy resources, and agricultural resources, would be essentially the same under this alternative as with the project because the same site would be developed, and would also be less than significant.

Effects related to the building design, including aesthetics, historical resources, shadow, and wind, would be similar to or slightly less substantial than those of the proposed project, because the lesser bulk at the lower tower and the additional setbacks would incrementally reduce this alternative's visual presence and apparent bulk, reduce the width of shadows cast by this alternative tower, and tend to reduce ground-level winds, even though under this alternative the tower would be the same height as that proposed with the project (approximately 350 feet plus mechanical penthouse). With respect to wind, this alternative would have an additional setback on the Second Street façade, at level 9, which the project would not have, which could slightly lessen ground-level winds at the corner of Second and Howard Streets, compared to those of the proposed project. Effects on aesthetics, historical resources, shadow, and wind would be less than significant, as they would with the proposed project. However, this alternative would likely not eliminate all existing exceedances of the pedestrian comfort criterion (similar to conditions with the proposed project) and, like the project, this alternative would require an exception to the ground-level wind current requirements of *Planning Code* Section 148.

This alternative would not result in any new significant impacts that would not arise with the proposed project.

C. Reduced Project Alternative

Description

This alternative would entail development of a 19-story, 250-foot-tall building containing the same mix of uses as the proposed project: office space on floors 2 through 19, and ground-floor restaurant/retail space. A single basement level would be provided, but no on-site parking spaces would be included in this alternative. Under this alternative, the new building would be 150 feet tall on the western portion of the

project site, in compliance with the existing height limit on that part of the site. Therefore, this alternative would not entail rezoning or a *General Plan* map amendment to change the height limit of the western portion of the site. Unlike the proposed project, this alternative would not include acquisition of a portion of the parcel occupied by the adjacent 631 Howard Street building and demolition of the concrete loading dock on that site.

This alternative would provide approximately 335,000 square feet of office space (about 325,000 square feet of gross floor area) and about 3,000 square feet of restaurant/retail space on the ground floor. The floor area ratio would be 13.6:1.

Impacts

With 25 percent less office space than the proposed project and a reduction in the amount of ground-floor restaurant/retail space, Alternative C would generate nearly 30 percent fewer peak-hour vehicle trips than the proposed project. However, this would not be sufficient to avoid the proposed project's significant traffic impacts at the intersections of Folsom/Second Streets and Harrison/Second Streets. As with the project, the Folsom/Second Streets intersection impact could be mitigated, while this alternative's impact at the Harrison/Second Streets intersection would be unavoidable, as with the project, because of the heavy p.m. peak-hour traffic flow destined for the Bay Bridge. This alternative would avoid the project's impact at the Second/Tehama Streets intersection because, with no on-site parking, this alternative would not increase traffic on Tehama Street except for travel by fewer than 5 trucks during the peak hour. Cumulative traffic impacts would be reduced, compared to the project, but this alternative, like the project, would combine with the large volume of Bay Bridge-bound traffic to result in significant cumulative impacts at Folsom/Second Streets in the p.m. peak hour. However, with reduced peak-hour trip generation, this alternative would contribute less than 5 percent of the growth in traffic at Howard/Third Streets, Howard/New Montgomery Streets, and Harrison/Second Streets. However, because this alternative would contribute considerably to the southbound Second Street left turn at Harrison/Second Streets (more than 20 percent of the growth), the cumulative impact at this intersection could be significant. The project's contribution would not be considerable Howard/Third Streets or Howard/New Montgomery Streets, and the cumulative impact there would be less than significant.

Daily vehicle trips would be 28 percent fewer than with the project, reducing emissions of criteria air pollutants by a like amount and reducing the project's less-than-significant emissions of these pollutants. Greenhouse gas emissions would similarly be reduced, reducing the project's less-than-significant impact in this regard, as well.

Effects related to the building design, including aesthetics, historical resources, shadow, and wind, would be less substantial than those of the proposed project, because the tower under this alternative would be about 30 percent (some 100 feet shorter) than is proposed with the project (about 265 feet including mechanical penthouse) and would also have less bulk at the upper stories. The combination of less height and smaller upper-story floor plates would reduce this alternative's visual presence and apparent bulk, to an even greater extent than with Alternative B. The new building under this alternative would appear at the same location as in the photomontages illustrated in Figures 9 through 14, pp. 39 – 44. However, the alternative

building would rise to a lesser height and would occupy less of the sky in these views, thereby reducing the project's less-than-significant impact on views and aesthetics.

At 250 feet, the Alternative C building would cast considerably less shadow on Yerba Buena Gardens than would the proposed project (see Figure 22, p. 143), thereby reducing the project's less-than-significant shadow impacts. Under this alternative, new shadow on Yerba Buena Gardens would generally be limited to small areas between the Yerba Buena Center for the Arts Theater and Gallery buildings, and would not cross the grassy area of the main esplanade. This alternative would cast no new shadow on the elevated "City Park" planned atop the new Transit Center. New shadow under this alternative also would not reach the open spaces in front of the buildings at Foundry Square, at First and Howard Streets. Effects on historical resources could also be incrementally reduced, given the shorter tower's moderating effect, compared to the project, on contrast with nearby historic buildings; these effects would be less-than-significant, as with the proposed project.

Wind effects of this alternative would be similar to those of the proposed project, and would be less than significant; ground-level wind speeds could be incrementally reduced from those indicated for the project in Section IV.H, but would not be expected to change dramatically, given that this alternative would, like the project, construct a high-rise building substantially taller than most nearby development. However, as with the project and Alternative B, this alternative would likely not eliminate all existing exceedances of the pedestrian comfort criterion (similar to conditions with the proposed project) and, like the project, this alternative would require an exception to the ground-level wind current requirements of *Planning Code* Section 148.

Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project. Other less-than-significant impacts discussed in Chapter IV and related to the intensity of development, including effects on population and housing, recreation and public space, utilities and service systems, and public services, would be incrementally less substantial under this alternative than they would with both the project and Alternative B because of the lesser amount of development proposed; as with the project and Alternative B, those impacts would be less than significant. Effects related to conditions at the project site, including impacts on geology, hydrology, biology, hazards, mineral/energy resources, and agricultural resources, would be essentially the same under this alternative as with the project because the same site would be developed, and would also be less than significant.

This alternative would not result in any new significant impacts that would not arise with the proposed project.

D. Preservation Alternative

Description

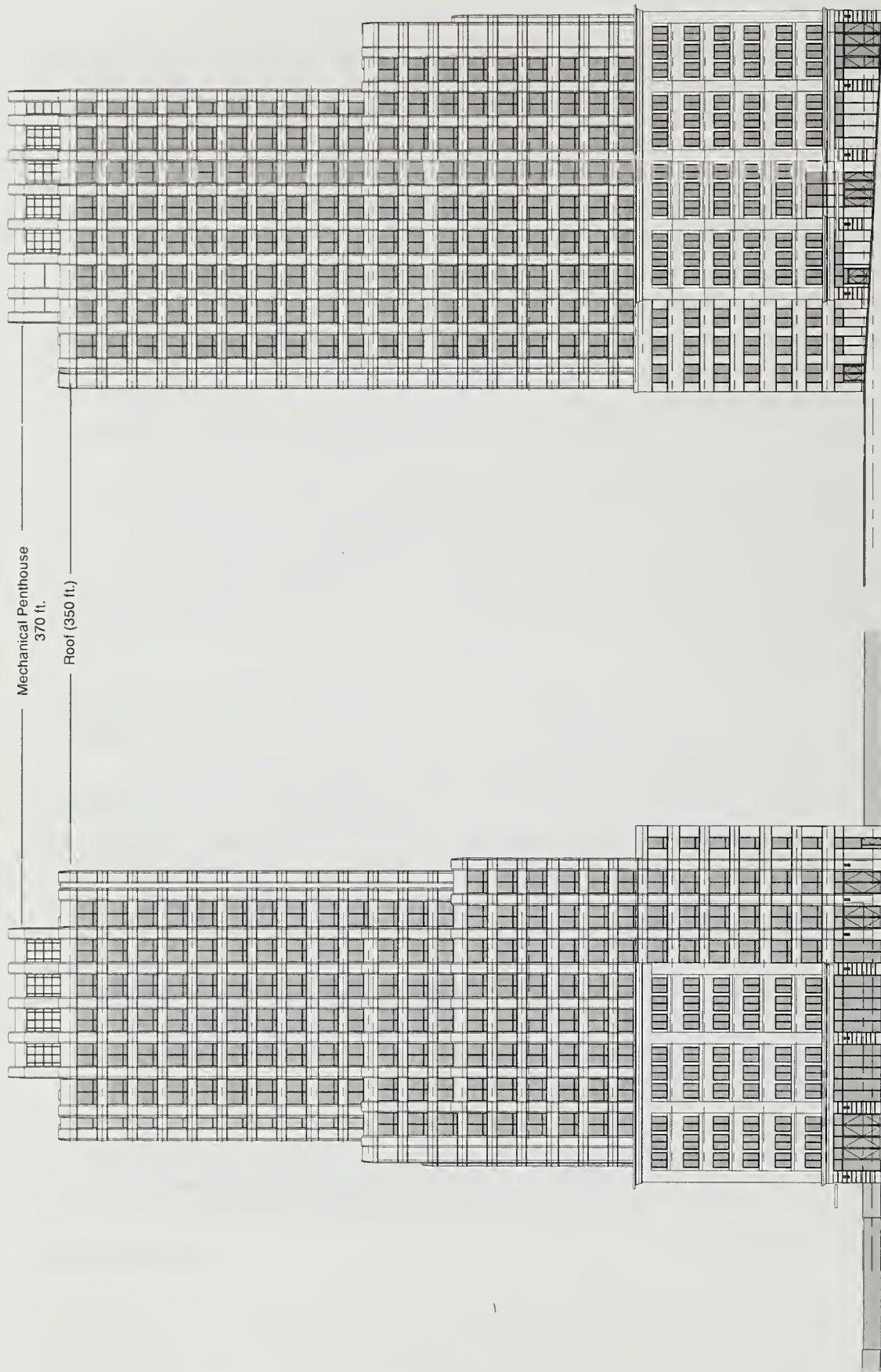
Like the proposed project, this alternative would develop a 26-story, 350-foot-tall office building with ground-floor restaurant/retail space. The Preservation Alternative would provide the same amount of office and retail space as the proposed project and, also like the project, would include two basement

parking levels. The primary difference between this alternative and the proposed project is that the Preservation Alternative is intended to be more sympathetic in design to the adjacent 631 Howard Street building and to the New Montgomery–Second Street Historic District and the Second and Howard Streets National District.

Unlike the proposed project, which would be clad in a glass curtain wall, the Preservation Alternative would feature a more traditional design of so-called “punched” windows, using precast concrete panels. The building base would be designed as a distinct seven-story visual element that would be consistent in height, massing, and character with nearby historic structures. The building base at the corner of Second and Howard Streets would be designed as a two-part vertical composition, with a double-height ground floor (24 feet tall, the same as with the project) and a six-story shaft above that would emphasize the vertical rhythm of the structural bays. The ground floor would be capped with a projecting cornice. Above the ground floor, the remainder of the building base would have six office floors and would also feature a projecting cornice at the top, approximately 104 feet above street grade at the corner. This design treatment of the base would extend four bays (about 125 feet) south of the corner along Second Street and three bays (about 95 feet) west of the corner along Howard Street. The bays would be delineated with pilasters and contain a horizontally oriented set of three windows within each bay; articulated spandrels would separate the windows at each story. The overall effect of the design treatment of the base would be that, from ground level, the base would “read” almost as a separate structure at the corner of Second and Howard Streets.

Above the upper cornice of the base, the upper stories of the tower would be set back, by seven feet from the Second Street property line and by two feet from the Howard Street property line. Additional setbacks would occur at the 14th and 17th stories. Other than in the seven-story corner portion of the base, windows in the Preservation Alternative would be essentially square, divided by pilasters and articulated spandrels that would repeat in a lattice-like pattern. A 20-foot-tall mechanical penthouse would likewise be clad in precast concrete panels and glass and would form a cap atop the building, set back from the property line on all four sides. Conceptual elevations for the Preservation Alternative are depicted in Figure 24.

The Preservation Alternative would provide approximately 430,450 square feet of office space (about 200 square feet less than the proposed project, which is negligible) and approximately 4,485 square feet of restaurant/retail space on the ground floor, the same as the project. Office-story floor plates would range from about 23,250 square feet at the building’s base (first seven stories) to about 13,350 square feet at the upper tower (floors 17 through 26). As with the project, the floor area ratio would be 18:1. Like the proposed project, this alternative would entail rezoning and a *General Plan* map amendment to change the height limit of the western portion of the site from 150 feet to 350 feet and would include acquisition of a portion of the parcel occupied by the adjacent 631 Howard Street building and demolition of the concrete loading dock on that site.



Howard Street (North) Elevation

Second Street (East) Elevation

0 32
Feet

SOURCE: Heller Manus Architects

Case No. 2006.1106E: 222 2nd Street (206337)

Figure 24
Preservation Alternative

Impacts

The Preservation Alternative would further reduce the proposed project's less-than-significant impact on the William Volker Building at 631 Howard Street and on the nearby historic districts due to the inclusion of a relatively strongly defined element at the corner of Second and Howard Streets, of traditional design and set off from the remainder of the tower by an upper cornice and setbacks. In particular, in views looking south on Second Street towards the project site, the setback of the tower from the base would enable the seven-story, 104-foot-tall base to appear as a southern anchor to the New Montgomery–Second Street Conservation District, largely consistent with the height and bulk of the historic buildings to the north along Second Street; the remaining height of the tower would recede somewhat due to the setback. A similar, although less pronounced, visual continuity with historic development would be apparent in views looking west on Howard Street towards the project site. Both the design of the Preservation Alternative and the massing of the base element would be more sympathetic to 631 Howard Street than would the proposed project, with its glass and metal facades, although, as indicated in Section IV.D. of this EIR, the proposed project would not materially impair adjacent historic buildings or districts such that a significant effect would ensue.

Like the proposed project, this alternative would have a less-than-significant impact on the two historic districts and other historical resources in the vicinity. In particular, the upper cornice line and the visual interest offered by the ground-floor cornice line would reduce the proposed project's contrast with the Marine Firemen's Union building to the south of the project site. However, because the historic significance of the Marine Firemen's Union building is related to its association with the collection of maritime workers' union halls on Rincon Hill, this alternative would, like the proposed project, have a less-than-significant impact on the Marine Firemen's Union building.

With the same office floor area, the same restaurant/retail space, and the same number of parking spaces as the proposed project, the Preservation Alternative would have the same impacts related to the intensity of development as the proposed project. Transportation effects and effects on air quality and noise would be the same as those of the proposed project. Like the project, this alternative would result in significant traffic impacts at the intersections of Folsom/Second Streets, Second/Tehama Streets, and Harrison/Second Streets. As with the project, the first two impacts could be mitigated, while this alternative's impact at the Harrison/Second Streets intersection would be unavoidable, as with the project, because of the heavy p.m. peak-hour traffic flow destined for the Bay Bridge. Cumulative traffic impacts would also be the same as those of the project: like the project, the Preservation Alternative would combine with the large volume of Bay Bridge-bound traffic to result in significant cumulative impacts at Folsom/Second Streets, Howard/Third Streets, Howard/New Montgomery Streets, and Harrison/Second Streets in the p.m. peak hour.

Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project; operational air quality and noise impacts would be less than significant, also as with the project. Shadow impacts would be similar to those of the project, because the overall massing would not differ substantially from that of the proposed project, while the additional setbacks in this alternative could be expected to incrementally reduce ground-level winds, compared to the project. Other less-than-

significant impacts discussed in Chapter IV and related to the intensity of development, including effects on population and housing, recreation and public space, utilities and service systems, and public services, would be the same under this alternative as with the project, and would be less than significant. Effects related to conditions at the project site, including impacts on geology, hydrology, biology, hazards, mineral/energy resources, and agricultural resources, would be essentially the same under this alternative as with the project because the same site would be developed, and would also be less than significant.

This alternative would not result in any new significant impacts that would not arise with the proposed project.

E. No-Rezoning Alternative

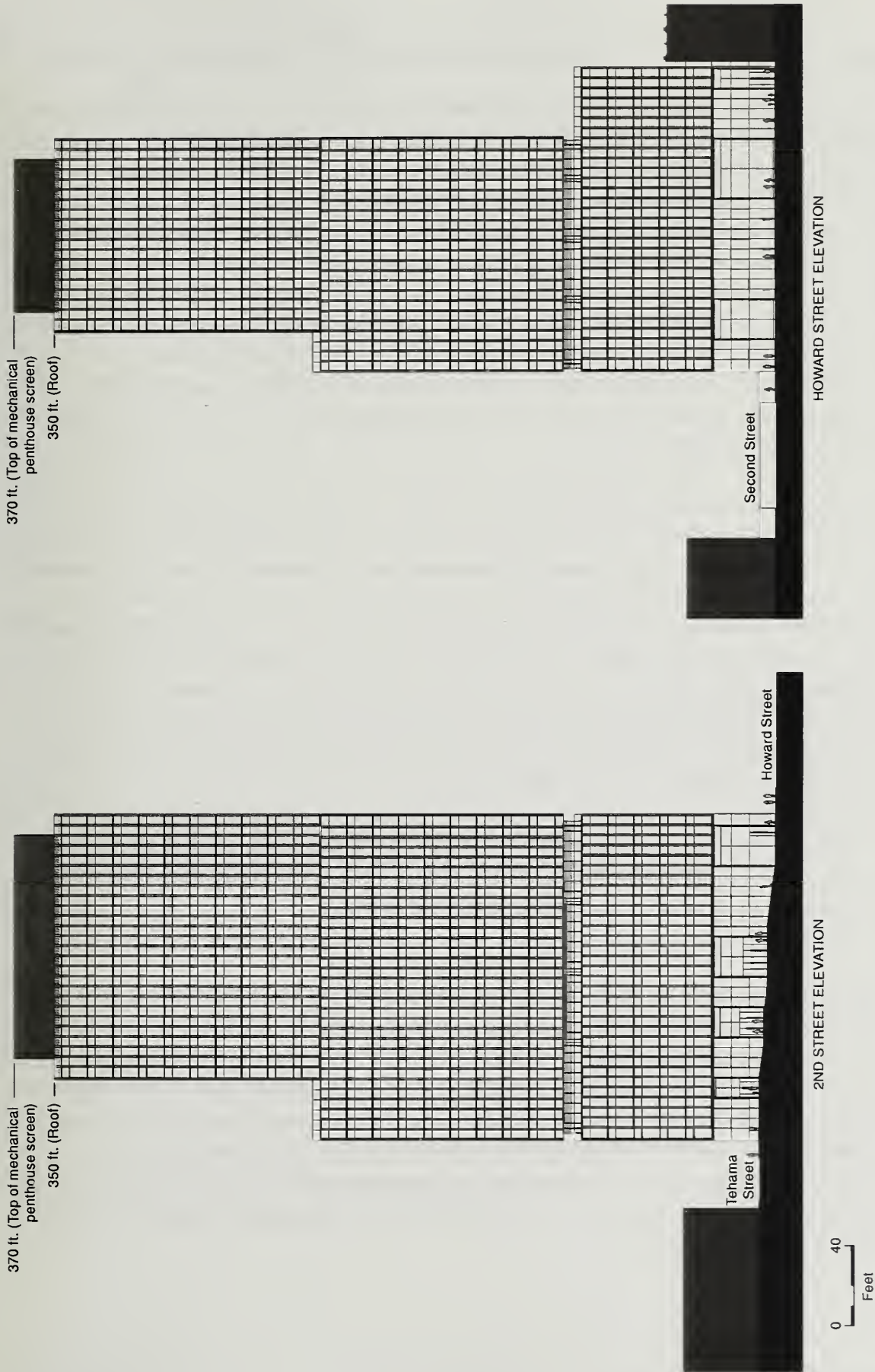
Description

Like Alternative B, this alternative would entail development of an office tower at essentially the same height and density as with the proposed project (i.e., the office and retail floor area would be the same as that with the project and the same number of auto and bicycle parking spaces would be provided). However, in order to comply with the existing 150-foot height limit on the northwestern portion of the project site, this alternative would entail construction of building that would be limited to 150 feet in height in this portion of the site, and this alternative would be 27 stories tall, rather than 26 stories as with the project. Like Alternative B, this alternative would have incrementally lesser floor-to-floor heights.

Under this alternative, the building would be set back about 45 feet from the western property line at a height of about 9 feet (above the 7th floor). This would result in floors 8 through 17 being about 10 percent smaller, in terms of floor area, than the same floors in the proposed project. To make up for this loss of floor area, under this alternative, the building base would accommodate an additional floor, compared to the project, for an overall height (in feet) and density that would be equivalent to the proposed project. Compared to the proposed project, this alternative would shift the apparent bulk of the tower towards the corner of Second and Howard Streets. Exterior materials would be the same as those on the proposed project, namely a glass curtain wall with windows divided by vertical and horizontal metal elements. Figure 25 depicts conceptual elevations of Alternative E.

Like the proposed project, this alternative would require an exception under *Planning Code* Section 309 to the bulk controls of Section 270, with respect to the lower tower. Also like the proposed project, this alternative would require an exception to the ground-level wind current requirements (Section 148) because this alternative, like the project, would not be expected to reduce existing exceedances of the pedestrian wind speed criterion, and would require an exception to requirement of Section 146 that the building shape be defined by a plane sloping away from Second Street at a prescribed angle above a specified height.

The development program under this alternative would be the same as that of the proposed project, and this alternative would also include acquisition of a portion of the adjacent 631 Howard Street parcel and demolition of the concrete loading dock on that site.



Impacts

With the same office floor area, the same restaurant/retail space, and the same number of parking spaces as the proposed project, the No-Rezoning Alternative would have the same impacts related to the intensity of development as the proposed project. Transportation effects and effects on air quality and noise would be the same as those of the proposed project. Like the project, this alternative would result in significant traffic impacts at the intersections of Folsom/Second Streets, Second/Tehama Streets, and Harrison/Second Streets. As with the project, the first two impacts could be mitigated, while this alternative's impact at the Harrison/Second Streets intersection would be unavoidable, as with the project, because of the heavy p.m. peak-hour traffic flow destined for the Bay Bridge. Cumulative traffic impacts would also be the same as those of the project: like the project, the Preservation Alternative would combine with the large volume of Bay Bridge-bound traffic to result in significant cumulative impacts at Folsom/Second Streets, Howard/Third Streets, Howard/New Montgomery Streets, and Harrison/Second Streets in the p.m. peak hour.

As with the proposed project, this alternative would result in a less-than-significant impact on the adjacent 631 Howard Street (William Volker) building, a historical resource under CEQA, because while this alternative would construct a seven-story, 90-foot-tall portion of the alternative immediately adjacent to the 50-foot-tall 631 Howard Street building, this alternative would shift the mass of the tower some 45 feet east of 631 Howard Street. Thus, while this alternative would result in a building mass adjacent to the William Volker Building that would be nearly twice that building's height, creating greater contrast with the historic building than would the proposed project, the tower under this alternative would be separated from the Volker Building by more than twice the project's 20-foot tower setback. Likewise, with regard to the adjacent and nearby historic districts, and as with the proposed project, this alternative would have a less-than-significant impact, like the project, because the project site is outside both districts and because the seven-story element would be comparable in height to buildings across Howard Street. Visual impacts would be similar to those of the project: the building under the No-Rezoning Alternative would have a greater westerly setback but lesser setbacks along the north-south dimension, meaning that while views would vary by specific viewpoint location, the overall visual sensation of this alternative would be similar to that of the project, and impacts would be less than significant.

Construction-related air quality and noise impacts would be less than significant with mitigation, as with the project; operational air quality and noise impacts would be less than significant, also as with the project. Other less-than-significant impacts discussed in Chapter IV and related to the intensity of development, including effects on population and housing, recreation and public space, utilities and service systems, and public services, would be the same under this alternative as with the project, and would be less than significant. Effects related to conditions at the project site, including impacts on geology, hydrology, biology, hazards, mineral/energy resources, and agricultural resources, would be essentially the same under this alternative as with the project because the same site would be developed, and would also be less than significant.

F. Environmentally Superior Alternative

The No Project Alternative would result in no significant new traffic impacts or impacts related to air noise, emissions, aesthetics, historical resources, shadow, or wind. Thus, the No Project Alternative would be the Environmentally Superior Alternative. However, the CEQA Guidelines (Sec. 15126.6(e)) requires that if the No Project Alternative is identified as the environmentally superior alternative, a second alternative shall be identified as environmentally superior. Therefore, the Reduced Project Alternative is discussed below.

The Reduced Project Alternative (Alternative C) would avoid the project's traffic impact at the intersection of Second/Tehama Streets and the project's considerable contribution to significant cumulative traffic impacts at Howard/Third and Howard/New Montgomery Streets. This alternative would not, however, avoid the project's significant and unavoidable traffic impact at the intersection of Second/Harrison Streets, nor would it eliminate the project's considerable contribution to significant cumulative impacts at Second/Folsom Streets and, likely, Second/Harrison Streets. This alternative would also reduce project-generated emissions of criteria pollutants and greenhouse gases (GHGs), as well as effects related to the building mass, including aesthetics, historical resources, shadow, and wind; however, none of these impacts would be significant with the proposed project.

Although direct impacts of Alternative C would be less substantial than those of the proposed project, it could be argued that an alternative such as the Reduced Project Alternative would unduly limit development on the project site, because this alternative would be developed at less than the currently permitted height and density. In the absence of a commensurate decrease in demand for office space, the potential result of such an alternative could ultimately be to increase demand for office space in locations outside downtown San Francisco, where transit access is poorer and fewer amenities are available within walking distance. As described in Section V.A, Growth Inducement, the proposed project would represent infill development in an urban area where services and transit are currently available, and could potentially result in substantially less impact on transportation systems and air quality than would development of a similar amount of office space in a more outlying part of the Bay Area where fewer services and less transit access are provided.

Therefore, while it cannot be concluded definitively that the Reduced Project Alternative would result in greater regional (or even global) impacts in the areas of traffic and emissions of criteria air pollutants and GHGs, it must be recognized that this alternative could potentially result in greater such impacts than would the proposed project, although it would be speculative to conclude that these impacts would be significant and adverse. Nevertheless, because it can be shown that this alternative would result in lesser direct and cumulative impacts in regard to traffic and air quality (emissions of criteria pollutants and GHGs) the specific areas noted above, Alternative C—the Reduced Project Alternative—is considered the “environmentally superior alternative” under CEQA.

APPENDIX A

Notice of Preparation



SAN FRANCISCO PLANNING DEPARTMENT

To Responsible Agencies, Trustee Agencies, and Interested Parties:

**RE: CASE NO. 2006.1106E: 222 SECOND STREET, SAN FRANCISCO
NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT**

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

A Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the above-referenced project, described below, has been issued by the Planning Department. The NOP/Notice of Public Scoping Meeting is either attached or is available upon request from **Sarah Jones**, whom you may reach at **(415) 575-9034** or at the above address. It is also available online at http://www.sfgov.org/site/planning_index.asp?id=37672. This notice is being sent to you because you have been identified as potentially having an interest in the project or the project area.

Project Description: The project site is located on the southwest corner of Second Street and Howard Street (Assessor's Block 3735, Lot 063), on the block bounded by Second Street, Howard Street, Hawthorne Street, and Folsom Street, in the Financial District. The project sponsor, Tishman Speyer Properties, proposes to construct a 25-story, 350-foot-tall office tower containing approximately 430,700 square feet of office space. The project would also include retail space and enclosed public space at the ground floor, and two levels of sub-grade parking containing 50 parking spaces (which would accommodate about 75 vehicles with valet parking), as well as small areas of outdoor open space at grade level. The proposed building would be a LEED (Leadership in Energy Efficient Design) Gold rated building.

The Planning Department has determined that an EIR must be prepared for the proposed project prior to any final decision regarding whether to approve the project. The purpose of the EIR is to provide information about potential significant physical environmental effects of the proposed project, to identify possible ways to minimize the significant effects, and to describe and analyze possible alternatives to the proposed project. Preparation of an NOP or EIR does not indicate a decision by the City to approve or to disapprove the project. However, prior to making any such decision, the decision makers must review and consider the information contained in the EIR.

The Planning Department will hold a **PUBLIC SCOPING MEETING** on **Wednesday, June 6, 6:00 p.m.**, at the **Marriott Courtyard, 299 Second Street**. The purpose of this meeting is to receive oral comments to assist the Planning Department in reviewing the scope and content of the environmental impact analysis and information to be contained in the EIR for the project. Written comments will also be accepted until the close of business on **June 18, 2007**. Written comments should be sent to Paul Maltzer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103.

If you work for an agency that is a Responsible or a Trustee Agency, we need to know the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. We will also need the name of the contact person for your agency. If you have questions concerning environmental review of the proposed project, please contact **Sarah Jones** at **(415) 575-9034**.

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND NOTICE OF
PUBLIC SCOPING MEETING

| | | |
|---------------------------|--|---------------------------|
| Date of this Notice: | May 19, 2007 | |
| Lead Agency: | San Francisco Planning Department 1650 Mission Street, 4th Floor, San Francisco, CA 94103 | |
| Agency Contact Person: | Sarah Jones | Telephone: (415) 575-9034 |
| Project Title: | 2006.1106E: 222 Second Street | |
| Project Sponsor: | Tishman Speyer Properties LP | |
| Contact Person: | Steve Gallagher | Telephone: (415) 344-6269 |
| Project Address: | 222 Second Street | |
| Assessor's Block and Lot: | Assessor's Block 3735; Lot 063 | |
| City and County: | San Francisco | |
| Project Description: | See attached. | |

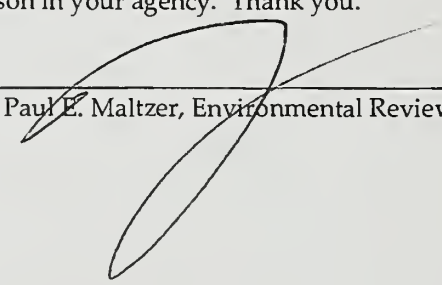
A PUBLIC SCOPING MEETING will be held pursuant to the State of California Public Resources Code Section 21083.9 and California Environmental Quality Act Guidelines Section 15206 to receive oral comments concerning the scope of the EIR. The meeting will be held on June 6, 2007 at 6:00 p.m. at the Marriott Courtyard, 299 Second Street. Please see the attached for more information.

Written comments on the scope of the EIR will be accepted until the close of business on June 18, 2007. Written comments should be sent to Paul Maltzer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103.

Documents relating to the proposed project are available for review, by appointment, at the Planning Department's Major Environmental Analysis office, 1650 Mission Street, Suite 400. Please call Sarah Jones at (415) 575-9034.

State Agencies: We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency. Thank you.

May 17, 2007
Date


Paul E. Maltzer, Environmental Review Officer

**222 SECOND STREET
CASE NO. 2006.1106E**

PROJECT DESCRIPTION

The project sponsor, Tishman Speyer Properties, proposes to construct a 25-story, 350-foot-tall office tower containing approximately 430,700 square feet of office space. The project would also include retail space and an enclosed public "plaza" space at the ground floor, and two levels of sub-grade parking containing 50 parking spaces (which would accommodate about 75 vehicles with valet parking). Outdoor open space at grade would also be provided. The building would be constructed to the standards required for a LEED (Leadership in Energy Efficient Design) Gold rating.¹

Project Location and Site Characteristics

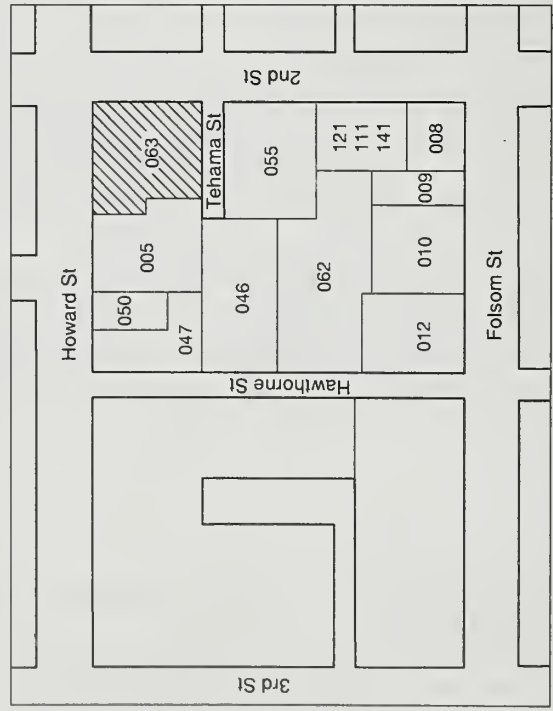
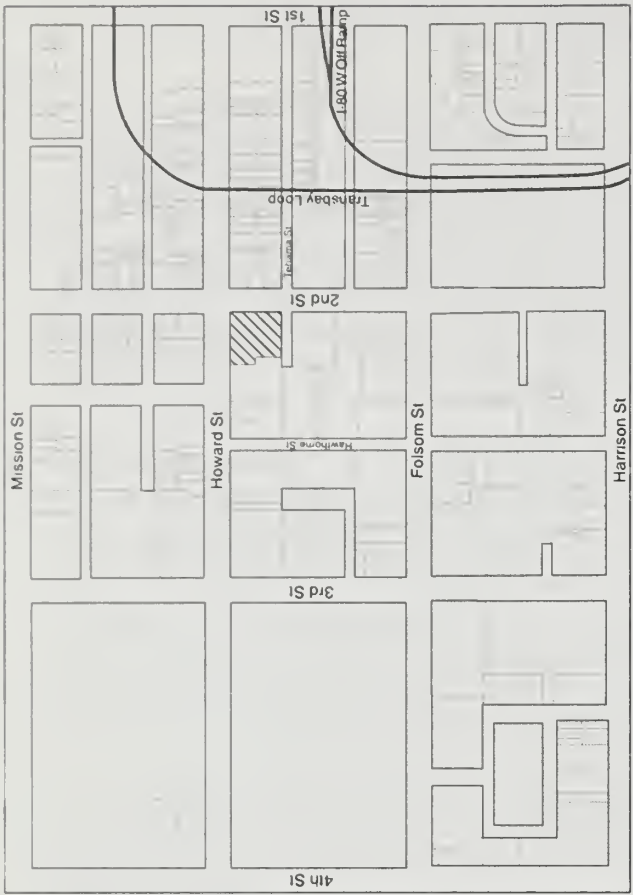
The project site, located on the southwest corner of Howard and Second Streets in what is becoming known as the South Financial District,² is within the C-3-O (SD) Downtown Office (Special Development) District, on Assessor's Block 3735, Lot 063. Most of the project site is within the 350-S height and bulk district (350-foot height limit; bulk limits for base, lower, and upper towers per San Francisco *Planning Code* Section 270(d)), although the northwest corner of the site is within a 150-S height and bulk district, which has a height limit of 150 feet. The C-3-O district is described in *Planning Code* Section 310.3 as consisting primarily of high-quality office development focusing on finance, corporate headquarters, and service industries, and serving as an employment center for the region. It permits office uses and retail sales and personal services uses. The Special Development (SD) designation (*Planning Code* Section 248) constrains development at densities above the base floor area ratio; additional density is allowable only if there is a commensurate reduction in the allowable density of development on other sites in the downtown by the transfer of development rights (TDR) from eligible sites. The C-3-O (SD) District permits a base floor area ratio (FAR) of 6:1; a maximum FAR of 18.1 is permitted with TDR. The project site is located adjacent to the southern edge of the New Montgomery/Second Street Conservation District.


The 23,925-square-foot project site is generally square, except where the western property line jogs eastward by 20 feet at the southwest corner of the lot. The site, which has frontages on Second, Howard, and Tehama Streets, is currently occupied by a surface parking lot. There are no buildings on the project site, nor are there any trees or other vegetation on the site. Figure 1 shows the project location and project site.

Elevation at the project site ranges from 23 feet above sea level at the south side, along Tehama Street, to 15 feet above sea level at the north side, along Howard Street. The project vicinity is relatively flat and level northward to the financial district and rises in elevation southward towards Rincon Hill, which begins its slope upward at Howard Street and rises to over 100 feet in elevation less than one-half mile

¹ Information about the LEED rating system can be obtained at <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>, accessed on April 30, 2007.

² Consistent with San Francisco practice, Market Street and streets parallel are considered east-west streets. Thus, Howard Street runs east-west, and Second Street runs north-south.



| Project Site | Lot Number | Assessor's Block |
|---|------------|------------------|
|  | 063 | 3735 |

om the project site to the southeast. Development in the vicinity of the project site consists primarily of office space above ground-floor retail stores, and there are numerous office uses within the site vicinity. Two relatively new mid-rise residential buildings are within a block of the site, at 199 New Montgomery Street at Howard, and at 246 Second Street, on the project block. The Transbay Transit Terminal is two blocks northeast of the project site, and the Moscone Center and Yerba Buena Center are one block west of the site.

Project Characteristics

The proposed 25-story project would have office uses on floors two through 25 and approximately 2,800 square feet of retail space on the ground level. The ground floor would also contain approximately 8,700 square feet of enclosed publicly accessible “plaza” space, the building lobby, tenant-only common space, a loading dock with two off-street freight loading spaces, and building service space. The main pedestrian entrance to the building lobby would be at the center of the Second Street frontage, with additional entrances along Howard Street and Tehama Street. Vehicle access to the proposed below-grade parking would be via a two-way ramp from Howard Street, at the northwest corner of the project site. Freight loading access would be from Tehama Street. Figure 2 depicts the proposed ground floor plan.

As can be seen in Figure 2, the proposed building would be an irregularly shaped, eight-sided polyhedron in plan view, and would occupy approximately 73 percent of the project site. The portions of the site not built upon would be devoted to outdoor seating areas and open space (at the northwest corner of the building, along portions of the Howard and Tehama Streets frontages, and at the main pedestrian entrance), an outdoor terrace connected to the ground-floor tenant common space, mechanical space, and the garage entry. The project’s proposed retail component would occupy the ground floor at the corner of Second and Tehama Streets.

The building would contain approximately 526,000 square feet of gross floor area, with 430,632 square feet of office space measured in accordance with the *Planning Code*. A total of 8,613 square feet of publicly accessible open space would be required to meet the *Planning Code* requirement of one square foot per 50 square feet of gross floor area in the C-3 Districts.³ Table 1 summarizes the characteristics of the project.

³ The proposed enclosed public space on the ground floor would be counted toward the project’s compliance with the public open space requirement.

Howard Street

155'-0"

20'-0"

135'-0"

Public Space
8,655 sf

Lobby

Retail Space
2,820 sf

Freight
Loading
Spaces

631
Howard

Second Street

Tehama Street



Publicly Accessible Open Space
(Interior and Exterior)

SOURCE: Heller Manus Architects

222 2nd Street (206337)

Figure 2
Ground Floor Plan

TABLE 1: PROJECT CHARACTERISTICS

| | (Square Feet) | (Gross Sq. Ft.) ^a |
|--------------------|----------------|------------------------------|
| Office | 448,320 | 430,630 |
| Retail | 2,820 | 2,820 |
| Lobby/Loading Dock | 15,860 | 0 |
| Parking | 47,579 | 30,144 |
| Mechanical | 11,635 | 0 |
| Total | 526,214 | 430,632 |

| | |
|---|--------------------------|
| Parking Spaces (Valet Capacity) | 50 (75) |
| Loading/Service Vehicle Spaces ^b | 2/4 |
| Height of Building | 350 feet plus mechanical |
| Number of Stories | 25 |
| Publicly Accessible Open Space | 8,655 |

^a Measured in accordance with *Planning Code* Sec. 102.9.

^b *Planning Code* Section 153(a)(6) allows the substitution in C-3 Districts of two service vehicle spaces for each required off-street freight, provided that a minimum of 50 percent of the required number of spaces are provided for freight loading.

About 30,150 square feet of parking would be provided in two basement levels beneath the project site, with access provided via a two-way driveway from Howard Street at the northwestern corner of the project site (see Figure 2). The basement levels would include a total of 50 marked parking spaces, with capacity for approximately 75 vehicles with valet parking operation and 52 stalls for bicycle parking, which would meet the requirement of *Planning Code* Section 155.4(d). The proposed floor area devoted to off-street parking would be less than the maximum permitted of seven percent of building gross floor area. Three off-street loading spaces would be provided on Tehama Street, which would not meet the *Planning Code* requirement under Section 152.1 (see Approvals Required, below).

As proposed, the project would be a tower of essentially the same bulk from the top of the building base to the topmost parapet, with irregular setbacks from the property lines and Second, Howard, and Tehama Streets, as depicted in Figure 2. The project would therefore exceed the bulk limits established in *Planning Code* Section 270(d) for floor plates and horizontal dimensions of the tower.

The project would be clad in an energy efficient insulated glass unit curtain wall, with vertical glass fins that would be intended to partially shade the curtain.

It is anticipated that the proposed project would be constructed atop a mat foundation. Excavation for the basement level parking garage and the foundation would require removal of approximately 240,000 cubic yards of soil.

Project construction would take about approximately 21 months, and occupancy is anticipated in late 2009. Construction costs are currently estimated at approximately \$100 million. The project architect is Thomas Phifer and Partners of New York, in association with Heller Manus of San Francisco.

Approvals Required

The proposed project's office and retail uses are principal permitted uses in the C-3-O (SD) District.

The project sponsor would request approval of 210,400 square feet of TDR to be consistent with the existing 18:1 FAR permitted with TDR and 350-foot height limit.⁴

The project would require Planning Commission review and approval under Section 309, because the project would exceed 50,000 gross square feet and because the sponsor seeks exceptions, pursuant to Section 309, to the following *Planning Code* sections: ground-level wind current requirements (Section 148), if it is determined that the project would not reduce existing exceedances of the pedestrian wind speed criterion; freight loading requirements (Section 161(i)), because the project would provide fewer than the required number of off-street loading spaces; and bulk requirements (Section 270), because the project would exceed bulk limits above the building's base. Section 309 also permits the imposition of certain conditions in regard to such matters as a project's siting and design; view, parking, traffic and transit effects; energy consumption; pedestrian environment; and other matters. The proposed project would also be subject to review and approval pursuant to *Planning Code* Section 321 (Office Limit) and Section 295, concerning shadow impacts.

PUBLIC SCOPING MEETING

The Planning Department is holding a **PUBLIC SCOPING MEETING** on:

Wednesday, June 6, 2007
Marriott Courtyard
299 Second Street
(Corner of Second and Folsom Streets)
6:00 p.m.

The purpose of this meeting is to assist the Planning Department in reviewing the scope and content of the environmental impact analysis and information to be contained in the EIR for the project. Each member of the public will be given three (3) minutes to comment and offer testimony for consideration. Written comments will also be accepted at the meetings and until the close of business on **June 18, 2007**.

⁴ The building footprint would not extend into the portion of the site that has a 150-foot height limit.

APPENDIX B

Historical Resources Documentation



SAN FRANCISCO PLANNING DEPARTMENT

MEMO

Historic Resource Evaluation Response

MEA Planner: Michael Jacinto
Project Address: 222 2nd Street
Block/Lot: 3735/063
Case No.: 2006.1106E
Date of Review: December 18, 2009
Planning Dept. Reviewer: Tim Frye
(415) 575-6822 | tim.frye@sfgov.org

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

PROPOSED PROJECT

☒ Demolition

☒ New Construction

PROJECT DESCRIPTION

The project sponsor proposes to demolish a loading dock constructed in 1949 that is attached to the building at 631 Howard (adjacent to the project site) and construct a 26-story, approximately 350-foot-tall office tower containing approximately 430,650 square feet of office space on an existing surface parking lot and the area previously occupied by the loading dock. The project would also include retail space and an enclosed publicly accessible open space at the ground floor, and two levels of sub-grade parking containing 54 parking spaces. The building would be constructed to the standards required for a LEED® (Leadership in Energy Efficient Design) Gold rating.

PRE-EXISTING HISTORIC RATING / SURVEY

The subject building at 625 Howard Street (historically known as the William Volker Building) is a Category II building identified as part of the Downtown Plan and Article 11 of the Planning Code. It is categorized as a Category "A" building for the purposes of CEQA because the is a known historic resource under Article 11 of the Planning Code.

HISTORIC DISTRICT / NEIGHBORHOOD CONTEXT

The project site is within the C-3-O (SD) Downtown Office (Special Development) District. Most of the site is within the 350-S height and bulk district, while the northwest corner of the site is within a 150-S height and bulk district. The site, which has frontages on Second, Howard, and Tehama Streets, is currently occupied by a surface parking lot. There are no buildings on the project site other than a small parking lot attendant's shed. The site is adjacent to the New Montgomery-Second Street Conservation District and the Second and Howard Streets National Register District. Aside from several new office developments and the nearby Transbay Terminal, the surrounding area is primarily comprised of office buildings constructed between 1906 and 1929 with ground floor commercial space.

1. **California Register Criteria of Significance:** Note, a building may be an historical resource if it meets any of the California Register criteria listed below. If more information is needed to make such a determination please specify what information is needed. (*This determination for California Register*

Eligibility is made based on existing data and research provided to the Planning Department by the above named preparer / consultant and other parties. Key pages of report and a photograph of the subject building are attached.)

Event: or ☒ Yes ☐ No ☐ Unable to determine
Persons: or ☐ Yes ☐ No ☐ Unable to determine
Architecture: or ☒ Yes ☐ No ☐ Unable to determine
Information Potential: ☐ Further investigation recommended.
District or Context: ☐ Yes, may contribute to a potential district or significant context

If Yes; Period of significance: District 1906-ca. 1929; William Volker Building 1929,1938

Notes: The subject building at 625 Howard Street is individually eligible for the National Register of Historic Places for its association under the events and the architecture criteria. The subject building is also a contributor to a California Register eligible district based upon the New Montgomery-Second Street Conservation District. Based upon supplemental survey work conducted as part of the Transit Center District Plan conducted by consultants, Kelley & VerPlanck, the identified eligible district would not follow the boundaries of the existing New Montgomery-Second Street Conservation District. For more information on the significance of the New Montgomery-Second Street Conservation District, please see Appendix F of Article 11 of the Planning Code.

Kelley & VerPlanck survey work identified a California Register eligible district that would include the existing Conservation and National Register Districts and would be expanded as well to the east and west along Howard Street to First and Third Streets, respectively, and west along Mission Street to Third Street.

In reviewing the documentation, the Department believes that the potentially eligible historic district boundaries should be revised. The boundaries proposed by Kelley & VerPlanck should be reduced because of the number of vacant lots, the location of non-contributing structures, and transition of building typologies identified in these areas for expansion.¹ In sum, while there are a number of buildings along Howard and Tehama Streets that are important in their own right or contribute to the overarching historic context of the area, there are two reasons why the Department does not believe that these areas along Howard should be included within the boundaries. First, the building typologies tend to be ancillary small-scale support or light industrial structures that do not have a strong association historically or architecturally with the contributing buildings within the district. Second, those buildings that do relate to the larger district are geographically separated by vacant lots and non-contributing buildings that makes drafting a logical contiguous boundary impossible.

The Department believes that the California Register eligible district encompasses the existing New Montgomery-Second Street Conservation District boundaries and the existing Second and Howard

¹ For more information regarding the proposed boundaries for the Second-New Montgomery-Mission Conservation District, please see the Chapter 5 – Historic Preservation of the Transit Center District Plan: Draft for Public Review November 2009.

National Register boundaries as well as west along Mission Street from New Montgomery to 3rd Street (to include the Aronson Building at the northwest corner of Third and Mission Streets); west along Natoma Street to Hunt Street; and west along Market Street to Third Street. These revised boundaries do not include a portion of the Second and Howard Streets National Register District and do not include the subject surface parking lot at the southeast corner of Second and Howard Streets.

2. **Integrity** is the ability of a property to convey its significance. To be a resource for the purposes of CEQA, a property must not only be shown to be significant under the California Register criteria, but it also must have integrity. To retain historic integrity a property will always possess several, and usually most, of the aspects. The subject property has retained or lacks integrity from the period of significance noted above:

Location: ☒ Retains ☐ Lacks
Association: ☒ Retains ☐ Lacks
Design: ☒ Retains ☐ Lacks
Workmanship: ☒ Retains ☐ Lacks

Setting: ☒ Retains ☐ Lacks
Feeling: ☒ Retains ☐ Lacks
Materials: ☒ Retains ☐ Lacks

Notes: The subject building at 625 Howard Street retains a high level of historic integrity as does the identified California Register District. While there has been some impact to setting and feeling due to several nearby high-rise office and mixed-use developments, within the district boundaries all aspects of integrity remain.

3. **Determination Whether the property is an "historical resource" for purposes of CEQA**

☐ No Resource Present (*Go to 6. below*)

☒ Historical Resource Present (*Continue to 4.*)

4. If the property appears to be an historical resource, whether the proposed project is consistent with the Secretary of Interior's Standards or if any proposed modifications would materially impair the resource (i.e. alter in an adverse manner those physical characteristics which justify the property's inclusion in any registry to which it belongs).

☒ The project will not cause a substantial adverse change in the significance of the resource such that the significance of the resource would be materially impaired. (*Continue to 5 if the project is an alteration.*)

☐ The project is a significant impact as proposed. (*Continue to 5 if the project is an alteration.*)

5. Character-defining features of the building to be retained or respected in order to be consistent with the Standards and/or avoid a significant adverse effect by the project, presently or cumulatively. Please recommend conditions of approval that may be desirable to avoid or reduce any adverse effects.

While greater than fifty years in age, the loading dock proposed for removal is a utilitarian alteration to the historic building that was borne out of the previous function of the building. It is not an alteration that has gained significance in its own right. It does not possess any of the character-defining features that are associated with the building or the district. The removal of the loading dock at the rear of the subject building would not result in a substantial adverse change to the 625 Howard Street or the district.

6. Whether the proposed project may have an adverse effect on off-site historical resources, such as adjacent historic properties.

☐ Yes ☒ No ☐ Unable to determine

Notes: The subject site is adjacent to the William Volker Building, the Marine Firemen, Oilers and Watertenders and Wiper's Association at 240 Second Street (also an individually eligible historic resource) as well as the two previous mentioned districts. The proposed project will not materially impair the Marine Firemen, Oilers and Watertenders and Wiper's Association nor the Second-New Montgomery-Mission Streets Conservation District or the Second and Howard Streets National Register District.

The Department believes that an impact has been avoided through design gestures in the proposed office building that give the project greater weight in acknowledging the surrounding context, in particular, the William Volker Building adjacent to the project site. The proposed building will provide a base that is consistent with the height and massing of the Volker Building and within the height range of adjacent historic resources associated with the two districts. The cladding system along the base will be differentiated and perceptible to the public in order to establish itself as part of the streetwall and relate its massing back to the surrounding context. The tower portion of the proposed building will be setback on the Howard Street elevation and along the west property line that it shares with the Volker building to further strengthen the base and provide visual relief to the adjacent historic resource. While the buildings within the adjacent districts exhibit more uniform building heights, the subject site is not within the boundaries of any of these identified districts. The overall height of the building is consistent with the area because the buildings outside of the identified districts contain a variety of historic and contemporary buildings that vary widely in height and massing.

PRESERVATION COORDINATOR REVIEW

Signature: Tina Tam

Tina Tam, Preservation Coordinator

Date: 12-18-09

cc: Linda Avery, Recording Secretary, Landmarks Preservation Advisory Board
Vimaliza Byrd / Historic Resource Impact Review File

FILED PROJECT NUMBER 006-2006-1106E

APPENDIX C

Wind Analysis Technical Memoranda

TECHNICAL MEMORANDUM

TO: Sarah Jones, AICP
Major Environmental Analysis
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

FROM: Charles Bennett
Environmental Science Associates
225 Bush Street, Suite 1700
San Francisco, CA 94104

DATE: September 12, 2007

SUBJECT: Potential Wind Conditions
Proposed 222 Second Street Development
San Francisco, California
ESA 206337

I. INTRODUCTION AND OVERVIEW

A wind-tunnel test was performed on July 18, 2007, for the proposed 222 Second Street office project, which would be located at the corner of Second and Howard Streets, in the City of San Francisco. The test was performed in order to define the pedestrian wind environment that would exist around the proposed project. Pedestrian-level wind speeds were measured at selected points for the site as it presently exists, and with the proposed project to quantify resulting pedestrian-level winds in public spaces near the proposed project. A third test was undertaken for a cumulative development scenario. Under present conditions, no exceedences of the wind hazard criterion occur at any of the points in the vicinity of the project site. No exceedences of the wind hazard criterion were identified at any pedestrian locations under either the projector the cumulative development scenario.

Details of the background and test methods are presented in this memorandum in Section II, Background. Test results and discussion are then presented in Section III, Study Results, and Section IV summarizes the findings and conclusions. An overview of the test results and conclusions follows.



Summaries of Tests

Test 1: Existing Setting

The upwind setting consists of the buildings existing in the vicinity of the project site, characterized by mid-rise structures and scattered high-rise towers. In determining wind conditions, the more important high-rise buildings in the area include: the 30-story W Hotel and the 12-story Convention Plaza which occupy the northern and southern corners of the intersection of Howard and Third Streets, respectively; the 24 story “Pactel” building on New Montgomery Street; and the 26 story 101 Second Street building. Across Tehama Street, stands a 17-story residential tower (at 246 Second Street). Northwest of the project site, across Howard Street, is a six-story building, followed by several mid-rise buildings as one approaches the financial district.

Wind conditions in the general vicinity of the project site range from sheltered to moderately windy; the average wind speed for all 51 existing pedestrian test points is 10.1 mph. Wind speeds in pedestrian areas range from 6 to 15 mph. Wind speeds of 14 mph or more occur at 3 of the total 51 locations. The highest wind speed measured (15 mph) occurs at the southeast corner of the 26-story building at 140 New Montgomery Street, located mid-block between Mission and Howard Streets (# 74). Forty-one of the 51 points are currently equal to or less than the Planning Code’s 11 mph pedestrian-comfort criterion.

The Code’s wind hazard criterion of 36 mph is not exceeded at any of the tested setting locations.

Test 2: Project in the Existing Setting Scenario

The project in the existing setting scenario consists of the 222 Second Street project, developed from plans¹ provided by the project architects, added to the currently existing buildings in the project vicinity.

With the project, the average wind speed for the 51 existing pedestrian test points would increase by about 0.1 mph to 10.2 mph. Wind speeds in pedestrian areas would range from 6 to 15 mph.

With the project, as compared to existing conditions, wind speeds would increase at 13 locations; remain unchanged at 24 locations; and decrease at 14 locations. Wind speeds of 14 mph or more would occur at 4 of the 51 test locations. The highest wind speed in the vicinity (15 mph) would occur at the northeast corner of the project, at the intersection of Howard and Second Streets. The project would eliminate four existing pedestrian-comfort criterion exceedences – one at Second and Clementina Streets, one at Folsom and Second Streets, one at Hawthorne and Howard Streets and one at Second and Tehama Streets. The project also would create six new pedestrian-comfort criterion exceedences at existing locations – four along Second Street near the intersection of Second and Howard Streets and one on Tehama Alley at the southwest corner of the project site. A total of 39 of the 51 test points would meet the Planning Code’s pedestrian-comfort criterion of 11 mph.

¹ Heller Manus, Inc., concept plans, dated February 2, 2007. The tower has a roof height of 350 ft., with 20 ft. high mechanical penthouses that bring the top parapet height to 370 ft.



With the project in place, the Code's wind hazard criterion would not be exceeded at any of the pedestrian locations tested.

Code Exceedences and Potential for Mitigation

The current design of the project as tested would create no new wind hazard exceedences. As such, the project as proposed would result in a less-than-significant effect on ground-level winds.²

Currently, 10 pedestrian-comfort criterion exceedences occur under the existing conditions. In net, the project in the existing setting would add 2 pedestrian-comfort criterion exceedences for a total of 12 pedestrian-comfort criterion exceedences. However, with the project in the cumulative setting, as compared to the project in the existing setting, pedestrian-comfort criterion exceedences would be reduced by 1, for a net total of 11 pedestrian-comfort criterion exceedences in public areas. Three project-related exceedences would remain under cumulative conditions.

Given the existing conditions of the site and vicinity and the magnitude of changes in wind conditions that can reasonably be expected from the project, it is not believed possible to design any structure that fully meets the goals of the project and which fully reduces ambient wind speeds to meet the comfort criteria of Section 148 at all locations in the vicinity of the site. The addition of street trees at sidewalk locations at the project site, such as would be required of the project under Code Section 143, can serve to reduce wind speeds and may reduce the number of comfort criterion exceedences. It cannot be assured, however, that the planting of large street trees would effectively reduce wind speeds at the identified exceedence locations to the criterion values or less.

Test 3: Project in the Cumulative Scenario

The project in the cumulative scenario consists of the 222 Second Street project with the addition of 9 high-rise buildings which have been proposed or for which entitlements have been obtained for development in the project vicinity. With the project in the cumulative scenario, the average wind speed for the 51 existing pedestrian test points would decrease by about 0.1 mph as compared to existing conditions and by 0.2 mph as compared to the project in the existing setting, resulting in an average of 10 mph overall. Wind speeds in pedestrian areas would range from 6 to 16 mph.

With the cumulative scenario, as compared to existing conditions, wind speeds would increase at 15 locations; remain unchanged at 9 locations, and decrease at 27 locations. Wind speeds of 14 mph or more would occur at 3 of the total 51 test locations. The highest wind speed in the vicinity (16 mph) would occur along Second Street adjacent to the project, at the south corner of the intersection of Howard and Second Streets.

The cumulative scenario would eliminate four existing pedestrian-comfort criterion exceedences – one at Minna and Second Street, one at Natoma and New Montgomery Street, and two at Harrison and Second Streets. The cumulative scenario also would create four new pedestrian-comfort criterion exceedences at existing locations – three along Second Street immediately downwind of the project site, and one in the pedestrian passage at the western side of the building. A total of 40 of the 51 test points would meet the Planning Code's pedestrian-comfort criterion of 11 mph.

² The Planning Department, for the purposes of the environmental review of a project, has determined that an exceedence of the Code's wind hazard criterion is a significant adverse environmental impact.



With the project in place in the cumulative setting, the Code's wind hazard criterion would not be exceeded at any of the pedestrian locations tested.

II. BACKGROUND

Tall buildings and structures can strongly affect the wind environment for pedestrians. In cities, groups of structures tend to slow the winds near ground level, due to the friction and drag of the structures themselves. Buildings that are much taller than the surrounding buildings intercept and redirect winds that might otherwise flow overhead, and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be relatively strong and also relatively turbulent, and can be incompatible with the intended uses of nearby ground-level spaces.

In the project area, wind conditions are relatively typical of conditions in the area, which can be characterized as sheltered to moderately windy.

Existing Climate and Wind Conditions

Average winds speeds in San Francisco are the highest in the summer and lowest in winter. However, the strongest peak winds occur in winter. The highest average wind speeds occur in mid-afternoon and the lowest in the early morning. Westerly to northwesterly winds are the most frequent and strongest winds during all seasons. Of the 16 primary wind directions, four have the greatest frequency of occurrence and subsequently make up the majority of the strong winds that occur. These winds include the northwest, west-northwest, west, and west-southwest winds.

Data describing the speed, direction, and frequency of occurrence of winds were gathered at the old San Francisco Federal Building at 50 United Nations Plaza (at a height of 132 ft.) during the six-year period, 1945 to 1950. Measurements taken hourly and averaged over one-minute periods have been tabulated for each month (averaged over the six years) in three-hour periods using seven classes of wind speed and 16 compass directions. Analysis of these data shows that during the hours from 6:00 a.m. to 8:00 p.m., about 70% of all winds blow from five of the 16 directions as follows: Northwest (NW), 10%; West-Northwest (WNW), 14%; West (W), 35%; West-Southwest (WSW), 2%; Southwest (SW), 9%; and all other winds, 28%. Calm conditions occur 2% of the time. More than 90% of measured winds over 13 mph blow from these directions.

Wind Speed and Pedestrian Comfort³

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to four miles per hour (mph) have no noticeable effect on pedestrian comfort. With speeds from four to eight mph, wind is felt on the face. Winds from eight to thirteen mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. Winds from 13 to 19 mph will raise loose paper, dust, and dry soil, and will disarrange hair. For winds from 19 to 26 mph, the force of the wind will be felt on the body. With 26 to 34 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over.

³ Lawson, T.V. and A.D. Penwarden, "The Effects of Wind on People in the Vicinity of Buildings," Proceedings of the Fourth International Conference on Wind Effects on Buildings and Structures, London, 1975, Cambridge University Press, Cambridge, U.K., 605-622 1976.



San Francisco Planning Code Requirements

This project is located in an area that is subject to the San Francisco Planning Code Section 148, Reduction of Ground-level Wind Currents in C-3 Districts. The Planning Code specifically outlines wind reduction criteria for the C-3 District. This analysis is performed using the wind testing analysis and evaluation methods to determine conformity with the Code. These requirements are described in Planning Code Section 148, a copy of which is attached to this Memorandum.

The Planning Code requires buildings to be shaped so as not to cause ground-level wind currents to exceed defined comfort and hazard criteria. The comfort criteria are that wind speeds will not exceed, more than 10% of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the hazard criterion of the Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph as averaged for a single full hour of the year. These comfort criteria are based on wind speeds that are measured for one minute and averaged. In contrast, the hazard criterion is based on winds that are measured for one hour and averaged; when stated on the same basis as the comfort criteria winds, the hazard criterion speed is a one-minute average of 36 mph⁴, to distinguish between the wind comfort conditions and hazardous winds. The Planning Code defines these wind speeds in terms of equivalent wind speeds⁵, an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence.

Model and Wind Testing Protocols

A 1-inch to 50-foot scale model of the project site and surrounding several blocks was constructed in order to simulate the project and its existing and future contexts. The scale model of the project and surrounding area was provided by ESA. The Project test model was constructed by ESA from plans provided by the project architects. The scale models were then tested in a boundary layer wind-tunnel facility at the University of California, Davis, under the direction of Dr. Bruce White. These tests, however, were performed independent of the University.

Wind-tunnel tests of the project were conducted for three configurations: the Existing Setting, the Project in the Existing Setting and the Project in the Cumulative Setting. In accordance with the protocol for wind-tunnel testing in Section 148 of the Planning Code, each configuration was wind-tunnel tested for each of four primary wind directions: northwest (NW), west-northwest (WNW), west (W) and southwest (SW).

The test procedure consisted of orienting the selected configuration of the model in the atmospheric boundary layer wind-tunnel and measuring the wind speed at each of the test locations with a hot-wire anemometer. All hot-wire measurements were taken at the same series of surface points around the project site for all test configurations and wind directions.

The wind tunnel allows testing of natural atmospheric boundary layer flow past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 feet), a test section of 1.22 m (4 feet) wide by 1.83 m (6 feet) high, and an adjustable false ceiling. The adjustable ceiling and

⁴ Arens, E., "Designing for Acceptable Wind Environment," Transactions Engineering Journal, ASCE 107, No. TE2, p.127-141, 1981.

⁵ Equivalent mean wind speed is defined as the mean wind, multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45. This amplifies the equivalent mean wind speed values when turbulence intensity is greater than 15%.

turbulence generators allow speeds within the tunnel to vary from 1 meter per second (m/s) to 8 m/s, or 2.2 mph to 17.9 mph.

Wind-speed measurements at each test location were made with a hot-wire anemometer, an instrument that directly relates rates of heat transfer to wind speeds by electronic signals that are proportional to the magnitude and steadiness of the wind. The hot-wire probe was calibrated to an accuracy of within 2% before the test procedure was begun. The hot-wire probe measured the analog voltage for approximately 30 seconds at each test location. When converted to digital signals, this measurement provided approximately 30,000 individual voltage samples that were averaged and the root mean square calculated for each test location. These data, when converted to velocity using the calibration curves, provided the mean velocity and turbulence⁶ values used to calculate the equivalent wind speed.

By measuring both the mean wind speeds and corresponding turbulence intensities, high wind speeds and gustiness (changes in wind speeds over short periods of time) could be determined. The ratio of near-surface speed to reference wind speed was calculated from the hot-wire measurements. The inherent uncertainty of measurements made with the hot-wire anemometer close to the surface of the model is $\pm 5\%$ of the true values.

These values were compared with the free stream wind as measured in the wind-tunnel. As a result, each wind-tunnel measurement resulted in a ratio that relates the speed of ground-level wind to the speed at the reference elevation, in this case the height of the Old San Francisco Federal Building. These ratios were the output data from the wind-tunnel tests.

These output data were reduced using a computer program that evaluated the contribution from each tested wind direction to the total wind speed output ratios to account for the differences between the boundary layer profile in the wind-tunnel and the profile as measured at the Old Federal Building located at 50 United Nations Plaza. The program then computed the equivalent wind speed that conforms to the selected criterion; either the wind speed exceeded 10% of the time or the wind speed exceeded one hour or more per year. The program also computed the percentage of time that the wind would exceed the speed criterion selected, and further computed the percentage contribution of each wind direction to the equivalent wind speed and to the excess of the criterion. In addition to the computations for each tested wind direction, the program computed an average ratio and used this to compute statistics for "Other" winds, which accounted for all remaining wind directions.

The output of the computer program is presented in the Wind-Tunnel Test Results tables for normal winds and for hazardous winds. These tables, appended to this Memorandum, provide the detail of the data and of the intermediate results that are described above. The wind tunnel ratios were included in the program input, and the results evaluated in the discussions that follow.

Wind Speed Profile Adjustments

The standard Section 148 wind test methodology implicitly assumes that the relationship between height above the ground and wind speed (referred to hereafter as the wind speed profile) is the same in the test area as at the Civic Center weather station. Wind speed adjustments were judged to be inappropriate and so were not made for this wind test. Because adjustments would have only produced lower wind speeds than those reported in this Memorandum, therefore, the results shown provide a more conservative estimate of wind conditions in the area.

⁶ Turbulence Intensity = RMS/Mean Velocity

III. TEST CASES AND STUDY RESULTS

Introduction

Wind-tunnel tests were conducted for the existing conditions, the proposed project in the existing setting, and the proposed project in the cumulative scenario. Fifty-one pedestrian locations were studied, including 3 locations in the pedestrian passage at the western side of the project between Howard and Tehama Streets. Each scenario was tested for the four prevailing wind directions: northwest, west-northwest, west and southwest. These winds are the most common in San Francisco and are therefore the most representative for evaluation of the proposed project. Existing street trees are found along some of the sidewalks in the vicinity, but the wind-tunnel testing did not account for those trees, so the existing wind speeds and the wind speed changes attributed to the project could differ somewhat from those reported here.

Test Locations⁷

The locations of interest for the Planning Code are those with public access for pedestrians. In the model for the project scenario, 51 pedestrian test locations (#7-10, 13, 14, 16-19, 21, 31-35, 40-69, 74, 81, 83, 87 and 89) surround the project block on the sidewalks of Second, New Montgomery, Natoma, Howard, Tehama, Clementina and Folsom Streets (see Figure 1).

Six of these test points (#16-18, 21, 57 and 58) were located immediately adjacent to the project site, with three (#21, 57 and 58) located in the pedestrian passage at the western side of the building between Howard and Tehama Streets.

Along Second Street between Minna and Harrison Streets were twenty-nine locations (#9, 10, 13, 14, 16 - 19, 31-34, 40-46, 59-61, 62, 64-67, 69 and 87). Fifteen points (#16-19, 34, 40, 42, 44, 59-61, 64, 65, 67 and 87) were positioned on the west side of Second Street with the remaining fourteen points (#9, 10, 13, 14, 31-33, 41, 43, 45, 46, 62, 66 and 69) on the east side of the street.

Along New Montgomery Street from Natoma Street to Howard Street were four measurement locations (#48, 74, 81 and 83). Two of the locations (#48 and 74) were on the west side of New Montgomery and two (81 and 83) were on the east side.

Along Natoma Street between New Montgomery Street and First Street were seven test locations (#44-47, 74, 83 and 87). Five points (#46, 47, 74, 83 and 87) were located on the south side of Natoma Street and two (#44 and 45) along the north side of the street.

Along Howard Street between Hawthorne Street and First Street were seventeen test locations (#13, 14, 16, 17, 21, 48-56, 68, 81 and 89). Eight points (#13, 17, 21, 53-56 and 68) were located on the south side of Howard Street and nine (#14, 16, 48-52, 81 and 89) along the north side of the street.

Along Tehama Street between Second Street and First Street were seven test locations (#7-10, 19, 58 and 59). Two points (#10 and 59) were located on the south side of Tehama Street and five (#7-9, 19 and 58) along the north side of the street.

⁷ The location numbers were assigned based on numbering used for previous testing in the project vicinity and new locations added for the present study; thus, the location numbers themselves hold no significance to the analysis of wind results.

Along Clementina Street between Second Street and First Street were three test locations (#31, 32 and 35). Two points (#31 and 32) were located on the north and south corner of the intersection of Clementina and Second Streets, respectively. The other point (#35) was located at a midpoint in the alley.

Along Folsom Street between Hawthorne Street and Second Street were five test locations (#33, 34 and 61-63). Three points (#61-63) were located on the south side of Folsom Street and two (#33 and 34) along the north side of the street.

Note that in describing wind conditions, some points were referred to in more than one group. For the purpose of identifying the applicable wind comfort criterion of the Code, all of the test locations were considered to be pedestrian.

Wind Evaluation and Criteria

Just as the wind-tunnel testing was performed in accordance with the test protocols of Planning Code Section 148, the performance requirements of Code Section 148 were used to evaluate the results of the tests. The mean wind speeds were compared to the Code's comfort criteria of 11 mph for areas of substantial pedestrian use and 7 mph for seating areas, each not to be exceeded more than 10% of the time. Separate calculations evaluated compliance with the hazard criterion. As previously noted, the wind data observed at the Old San Francisco Federal Building were not full hour average speeds as identified by the Code, so it is necessary to adjust the wind criterion speed to obtain a valid comparison with the available data and the equivalent wind speeds based on those data. When normalized to the equivalent wind speeds used here, the hazard criterion speed is equal to 36 mph, the value used in the tables. Throughout the following discussion the wind speeds reported refer to the equivalent wind speeds that would be exceeded 10% of the time when referring to the comfort criteria, and about 0.011416% of the time when referring to the hazard criterion.

Test Output

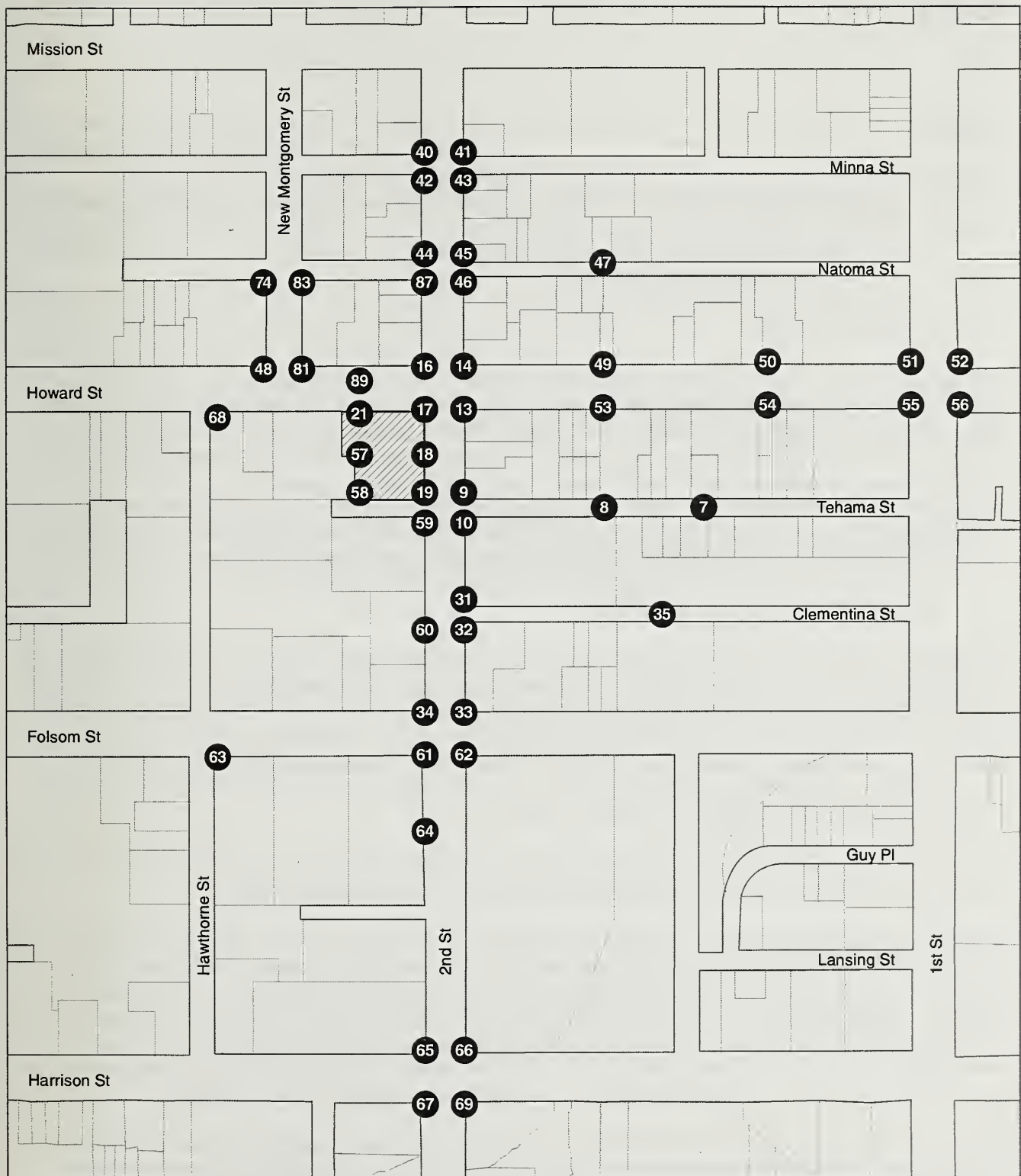
The basic wind-tunnel test data and the detailed outputs of the computer program were presented in tables of comfort criteria and hazard criteria evaluations for each of the scenarios, Existing, Project and Cumulative. These output tables, appended to this Memorandum, provide the detail of the data and the intermediate results described above. The wind-tunnel ratios and the wind profile adjustment factors for each wind direction were included. The results were evaluated in the discussions that follow.

Figure 1 identifies the measurement point locations. Summary information about the wind-tunnel test results and evaluations of compliance with the comfort and hazard criteria were presented for the Existing, Project and Cumulative scenarios in summary Tables 1 and 2. Table 1 presents the Pedestrian-Comfort Analysis results, namely the measured 10% exceeded speed and the percentage of time that the comfort criterion is exceeded for each test location and test scenario. Table 2 presents the Wind Hazard Analyses results, the equivalent wind speed and the number of hours per year of exceedence of the hazard criterion for each test location and test scenario.

Throughout the following discussion, references are made to values from these Tables. Note that the times in hours and wind speeds in mph presented in those tables were rounded to the nearest integer value. The sums, differences and averages presented also were rounded after calculations that were made using the actual (unrounded) values. As a result, what may appear to be discrepancies in the tabular results, such as sums for each of the columns or differences between values for project and existing conditions, are simply



due to the rounding of results. However, the rounded values of the differences in wind speeds and in hours of exceedences in the Tables best represent the measured changes in those quantities.



SOURCE: ESA

Case No. 2006.1106E: 222 2nd Street (206337)

Figure 1
Wind Test Point Locations

Discussion

Throughout the following discussion the wind speeds reported refer to the equivalent wind speeds that would be exceeded 10% of the time when referring to the Pedestrian-Comfort Criterion, and winds exceeded 1 hour per year when referring to the Wind Hazard Criterion.

TEST 1 - THE EXISTING WIND ENVIRONMENT

The Existing Setting

This setting consists generally of the existing buildings in the vicinity of the project site. Development in the immediate vicinity is characterized by mid-rise structures and scattered high-rise towers. In determining wind conditions, the more important high-rise buildings in the area include: the 30-story W Hotel and the 12-story Convention Plaza which occupy the northern and southern corners of the intersection of Howard and Third Streets, respectively; the 24 story "Pactel" building on New Montgomery Street; and the 26 story 101 Second Street building. On the project block and to the south, across Tehama Street, stands a 16-story residential tower (at 246 Second Street). To the north of the project site, across Howard Street, is a six-story building, followed by several mid-rise buildings as one approaches the financial district.

Existing Comfort Criterion Conditions

The general vicinity of the project site is sheltered to moderately windy; the average wind speed for all 51 existing pedestrian test points is 10.1 mph. Wind speeds in pedestrian areas range from 6 to 15 mph. Wind speeds of 14 mph or more occur at 3 of the total 51 locations. The highest wind speed in the vicinity (15 mph) occurs at the southeast corner of the 26-story building at 140 New Montgomery Street, located mid-block between Mission and Howard Streets (# 74). Forty-one of the 51 points (#s 7-10, 13, 14, 16-19, 21, 32, 34, 35, 40, 42-58, 60-62, 64, 65, 67, 81, 87 and 89) are currently equal to or less than the Planning Code's 11 mph pedestrian-comfort criterion. See Figure 1 and Table 1.

At the six test points (#17-19, 21, 57 and 58) immediately adjacent to the proposed project site, wind speeds currently range from 6 to 11 mph, none of which exceed the pedestrian comfort criterion.

Wind speeds range from 6 mph to 14 mph at the twenty-nine locations (#9, 10, 13, 14, 16 -19, 31-34, 40-46, 59-61, 62, 64-67, 69 and 87) along Second Street between Minna and Harrison Streets. The highest wind speeds (12-14 mph) occur predominantly on the eastern side of Second Street at the intersections of streets and alleys, such as Minna Alley (#41), Clementina Alley (#31), Folsom Street (#33) and Harrison Street (#66 and 69). The remaining two exceedences occur at the southwestern corners of Tehama and Second Streets (#59) and Natoma and Second Streets (#87). Winds at 23 of these twenty-nine locations (#9, 10, 13, 14, 16-19, 32, 34, 40, 42-46, 60-62, 64-67, 87) are at or less than the pedestrian-comfort criterion.

Along New Montgomery Street from Natoma Street to Howard Street, wind speeds at the four measurement locations (#48, 74, 81 and 83) range from 11 to 15 mph. Winds at 2 of the 4 locations (#74 and 83) exceed the pedestrian-comfort criterion. These include the highest wind speed in the vicinity (15 mph) occurring at the southeast corner of the 26-story building at 140 New Montgomery Street (#74). The other exceedence (12 mph) is located directly across New Montgomery Street from the building (#83).

Along Natoma Street between New Montgomery Street and First Street, wind speeds at the seven measurement locations, (#44-47, 74, 83 and 87) which include the aforementioned building at 140 New

Montgomery Street, range from 7 to 15 mph. Winds at 5 of the seven locations (#44-47 and 87) are at or less than the pedestrian-comfort criterion.

Along Howard Street between Hawthorne Street and First Street, wind speeds at the seventeen measurement locations (#13, 14, 16, 17, 21, 48, 49-56, 68, 81 and 89) range from 6 to 12 mph. Winds at 16 of the 17 locations (#13, 14, 16, 17, 21, 48, 49-56, 81 and 89) are at or less than the pedestrian-comfort criterion.

Along Tehama Street between Second Street and First Street, wind speeds at the seven measurement locations (#7-10, 19, 58 and 59) range from 10 to 12 mph. Winds at 6 of the 7 locations (#7-10, 19, and 58) are at or less than the pedestrian-comfort criterion.

Along Clementina Street between Second Street and First Street wind speeds at the three measurement locations (#31, 32 and 35) range from 10 to 12 mph. Winds at 2 of the 3 locations (#32 and 35) are at or less than the pedestrian-comfort criterion.

Along Folsom Street between Hawthorne Street and Second Street, wind speeds at the five measurement locations (#33, 34 and 61-63) range from 10 to 14 mph. Winds at 3 of the 5 locations (#34, 61 and 62) are at or less than the pedestrian-comfort criterion. The two exceedences (both 14 mph) occur at the southwest corner of Folsom and Hawthorne Streets (#63) and at the northwest corner of Folsom and Second Streets.

Existing Hazard Conditions

The Code's wind hazard criterion is not exceeded at any of the 51 existing pedestrian test locations. See Table 2.

Table 1 **Wind Comfort Analysis – Existing, Proposed Project and Cumulative Conditions**
222 Second Street **Wind-Tunnel Test, July 2007**

TABLE 1: Wind Comfort Analysis

| References | | Existing Setting | | Project | | | Cumulative | | | | | |
|-------------------|-------------------------------|--------------------------------------|--|---------------------------------|--------------------------------------|--|---|---------------------------------|--------------------------------------|--|--|---------------------------------|
| Location Number | Comfort Criterion Speed (mph) | Measured Equivalent Wind Speed (mph) | Percent of Time Wind Speed Exceeds Criterion | e x c e e d s | Measured Equivalent Wind Speed (mph) | Percent of Time Wind Speed Exceeds Criterion | Speed Change Relative to Existing (mph) | e x c e e d s | Measured Equivalent Wind Speed (mph) | Percent of Time Wind Speed Exceeds Criterion | Speed Change Relative to Project (mph) | e x c e e d s |
| | | | | | | | | | | | | |
| 7 | 11 | 10 | 6 | | 8 | 3 | -2 | | 9 | 4 | 1 | |
| 8 | 11 | 11 | 10 | | 10 | 7 | -1 | | 10 | 6 | | |
| 9 | 11 | 11 | 10 | | 13 | 19 | 2 | s | 14 | 20 | 1 | p |
| 10 | 11 | 11 | 9 | | 10 | 8 | | | 12 | 16 | 2 | s |
| 13 | 11 | 11 | 9 | | 13 | 19 | 3 | s | 13 | 19 | | p |
| 14 | 11 | 11 | 9 | | 13 | 14 | 2 | s | 10 | 8 | -2 | - |
| 16 | 11 | 6 | 0 | | 11 | 7 | 4 | | 10 | 7 | | |
| 17 | 11 | 10 | 7 | | 15 | 24 | 5 | s | 16 | 27 | 1 | p |
| 18 | 11 | 11 | 9 | | 11 | 10 | | | 12 | 13 | 1 | s |
| 19 | 11 | 10 | 8 | | 12 | 17 | 2 | s | 13 | 15 | 1 | p |
| 21 | 11 | 11 | 11 | | 11 | 11 | | | 12 | 15 | 1 | s |
| 31 | 11 | 12 | 12 | e | 11 | 11 | | - | 12 | 14 | 1 | s |
| 32 | 11 | 11 | 9 | | 9 | 3 | -2 | | 10 | 5 | 1 | |
| 33 | 11 | 14 | 23 | e | 10 | 5 | -5 | - | 11 | 11 | 2 | |
| 34 | 11 | 11 | 10 | | 7 | 0 | -3 | | 8 | 2 | 1 | |
| 35 | 11 | 10 | 7 | | 11 | 10 | | | 11 | 8 | | |
| 40 | 11 | 8 | 2 | | 8 | 2 | | | 8 | 5 | | |
| 41 | 11 | 12 | 13 | e | 12 | 12 | | e | 11 | 9 | -1 | - |
| 42 | 11 | 9 | 5 | | 9 | 3 | | | 8 | 4 | -1 | |
| 43 | 11 | 10 | 5 | | 10 | 4 | | | 8 | 5 | -1 | |
| 44 | 11 | 7 | 1 | | 7 | 1 | | | 6 | 0 | -1 | |
| 45 | 11 | 10 | 8 | | 11 | 10 | 1 | | 7 | 1 | -4 | |
| 46 | 11 | 10 | 8 | | 9 | 7 | -1 | | 7 | 2 | -2 | |
| 47 | 11 | 7 | 0 | | 8 | 1 | 1 | | 7 | 0 | -1 | |
| 48 | 11 | 11 | 10 | | 10 | 8 | -1 | | 9 | 4 | -1 | |
| 49 | 11 | 8 | 1 | | 8 | 3 | | | 8 | 0 | | |
| 50 | 11 | 10 | 6 | | 10 | 4 | | | 9 | 3 | | |
| 51 | 11 | 9 | 2 | | 9 | 2 | | | 9 | 6 | 1 | |
| 52 | 11 | 6 | 0 | | 6 | 0 | | | 7 | 1 | 1 | |
| 53 | 11 | 9 | 5 | | 10 | 8 | 1 | | 9 | 4 | -1 | |
| 54 | 11 | 10 | 8 | | 10 | 9 | | | 9 | 3 | -2 | |
| 55 | 11 | 8 | 1 | | 8 | 1 | | | 10 | 7 | 2 | |
| 56 | 11 | 8 | 1 | | 8 | 1 | | | 9 | 3 | 1 | |
| 57 | 11 | 6 | 0 | | 8 | 3 | 2 | | 11 | 11 | 3 | |
| 58 | 11 | 7 | 0 | | 14 | 19 | 7 | s | 15 | 24 | 1 | p |
| 59 | 11 | 12 | 13 | e | 11 | 9 | -1 | - | 9 | 6 | -2 | |
| 60 | 11 | 11 | 9 | | 9 | 6 | -1 | | 10 | 7 | 1 | |
| 61 | 11 | 11 | 11 | | 10 | 6 | -1 | | 10 | 6 | | |
| 62 | 11 | 10 | 8 | | 9 | 4 | -1 | | 10 | 5 | | |
| 63 | 11 | 14 | 21 | e | 14 | 21 | | e | 13 | 18 | -1 | e |
| 64 | 11 | 10 | 7 | | 7 | 1 | -3 | | 8 | 1 | | |
| 65 | 11 | 9 | 4 | | 8 | 4 | | | 8 | 3 | -1 | |
| 66 | 11 | 12 | 16 | e | 12 | 17 | | e | 11 | 11 | -1 | - |
| 67 | 11 | 8 | 2 | | 9 | 3 | | | 8 | 2 | | |
| 68 | 11 | 12 | 17 | e | 11 | 12 | -1 | - | 11 | 7 | -1 | |
| 69 | 11 | 12 | 14 | e | 12 | 12 | | e | 11 | 10 | -1 | - |
| 74 | 11 | 15 | 23 | e | 12 | 15 | -3 | e | 12 | 12 | -1 | e |
| 81 | 11 | 11 | 12 | | 11 | 10 | | | 11 | 9 | | |
| 83 | 11 | 12 | 12 | e | 14 | 15 | 2 | e | 9 | 6 | -4 | - |
| 87 | 11 | 9 | 4 | | 9 | 4 | | | 8 | 3 | -1 | |
| 89 | 11 | 6 | 0 | | 9 | 3 | 3 | | 10 | 5 | | |
| Average mph and % | | 10.1 mph | 8% | | 10.2 mph | 8% | 0.2 mph | | 10 mph | 8% | -0.2 mph | |
| Exceedances | | Total 10 | | | Total 12 | | | | Total 11 | | | |
| Counts | | Existing | 10 | e | Existing | 6 | e | | Existing or Project | 7 | e/p | |
| | | | | | New, due to scenario | 6 | s | | New, due to scenario | 4 | s | |
| | | | | | New, at new location | 0 | n | | New, at new location | 0 | n | |
| | | | | | Eliminated | 4 | - | | Eliminated | 5 | - | |

Note: Wind speeds and durations are rounded, so column totals and row differences may not add.

Table 2 **Wind Hazard Analysis - Existing, Proposed Project and Cumulative Conditions**
222 Second Street **Wind-Tunnel Test, July 2007**

TABLE 2: Wind Hazard Analysis

| References | | Existing Setting | | | Project | | | | Cumulative | | | |
|-------------------|------------------------------|--------------------------------------|--|---------------|--------------------------------------|--|---|---------------|--------------------------------------|--|----------------------------------|---------------|
| Location Number | Hazard Criterion Speed (mph) | Measured Equivalent Wind Speed (mph) | Hours per year Wind Exceeds Hazard Criterion | e x c e e d s | Measured Equivalent Wind Speed (mph) | Hours per year Wind Exceeds Hazard Criterion | Hours Change Relative to Existing Setting | e x c e e d s | Measured Equivalent Wind Speed (mph) | Hours per year Wind Exceeds Hazard Criterion | Hours Change Relative to Project | e x c e e d s |
| | | | | | | | | | | | | |
| 7 | 36 | 17 | | | 18 | | | | 16 | | | |
| 8 | 36 | 23 | | | 23 | | | | 19 | | | |
| 9 | 36 | 29 | | | 30 | | | | 27 | | | |
| 10 | 36 | 24 | | | 20 | | | | 21 | | | |
| 13 | 36 | 26 | | | 28 | | | | 24 | | | |
| 14 | 36 | 27 | | | 32 | | | | 23 | | | |
| 16 | 36 | 15 | | | 20 | | | | 19 | | | |
| 17 | 36 | 22 | | | 25 | | | | 27 | | | |
| 18 | 36 | 26 | | | 26 | | | | 32 | | | |
| 19 | 36 | 23 | | | 22 | | | | 29 | | | |
| 21 | 36 | 20 | | | 22 | | | | 26 | | | |
| 31 | 36 | 23 | | | 26 | | | | 25 | | | |
| 32 | 36 | 23 | | | 16 | | | | 17 | | | |
| 33 | 36 | 24 | | | 17 | | | | 19 | | | |
| 34 | 36 | 26 | | | 13 | | | | 16 | | | |
| 35 | 36 | 18 | | | 20 | | | | 18 | | | |
| 40 | 36 | 16 | | | 14 | | | | 20 | | | |
| 41 | 36 | 20 | | | 20 | | | | 22 | | | |
| 42 | 36 | 20 | | | 18 | | | | 20 | | | |
| 43 | 36 | 17 | | | 17 | | | | 20 | | | |
| 44 | 36 | 14 | | | 14 | | | | 13 | | | |
| 45 | 36 | 25 | | | 26 | | | | 15 | | | |
| 46 | 36 | 21 | | | 22 | | | | 17 | | | |
| 47 | 36 | 13 | | | 14 | | | | 12 | | | |
| 48 | 36 | 30 | | | 26 | | | | 19 | | | |
| 49 | 36 | 16 | | | 18 | | | | 15 | | | |
| 50 | 36 | 19 | | | 17 | | | | 17 | | | |
| 51 | 36 | 16 | | | 15 | | | | 22 | | | |
| 52 | 36 | 11 | | | 10 | | | | 17 | | | |
| 53 | 36 | 19 | | | 21 | | | | 20 | | | |
| 54 | 36 | 19 | | | 20 | | | | 20 | | | |
| 55 | 36 | 14 | | | 14 | | | | 22 | | | |
| 56 | 36 | 15 | | | 13 | | | | 21 | | | |
| 57 | 36 | 10 | | | 19 | | | | 27 | | | |
| 58 | 36 | 14 | | | 26 | | | | 29 | | | |
| 59 | 36 | 24 | | | 21 | | | | 22 | | | |
| 60 | 36 | 25 | | | 21 | | | | 24 | | | |
| 61 | 36 | 19 | | | 18 | | | | 18 | | | |
| 62 | 36 | 19 | | | 18 | | | | 17 | | | |
| 63 | 36 | 27 | | | 27 | | | | 24 | | | |
| 64 | 36 | 18 | | | 15 | | | | 16 | | | |
| 65 | 36 | 22 | | | 22 | | | | 22 | | | |
| 66 | 36 | 24 | | | 21 | | | | 20 | | | |
| 67 | 36 | 20 | | | 19 | | | | 20 | | | |
| 68 | 36 | 22 | | | 19 | | | | 18 | | | |
| 69 | 36 | 20 | | | 20 | | | | 20 | | | |
| 74 | 36 | 32 | | | 30 | | | | 28 | | | |
| 81 | 36 | 19 | | | 19 | | | | 19 | | | |
| 83 | 36 | 26 | | | 30 | | | | 21 | | | |
| 87 | 36 | 20 | | | 20 | | | | 18 | | | |
| 89 | 36 | 14 | | | 18 | | | | 19 | | | |
| Average mph and % | | 21 mph | 0 hr | | 21 mph | 0 hr | 0 hr | | 21 mph | 0 hr | 0 hr | |
| Exceedances | | Total | 0 | | Total | 0 | | | Total | 0 | | |
| Counts | | Existing | 0 | e | Existing | 0 | e | | Existing or Project | 0 | | s |
| | | | | | New, due to scenario | 0 | s | | New, due to scenario | 0 | | s |
| | | | | | New, at new location | 0 | n | | New, at new location | 0 | | n |
| | | | | | Eliminated | 0 | - | | Eliminated | 0 | | - |

Note: Wind speeds and durations are rounded, so column totals and row differences may not add. A hazard criterion exceedence would be shown by an entry of the number of hours per year that the hazard criterion is exceeded.



TEST 2 - PROJECT WIND IMPACTS

Project in the Existing Setting

The project setting consists of the 222 Second Street project, developed from plans⁸ provided by the project architects, that was added to the existing setting that was described under Test 1. The project is located on the south corner of the intersection of Howard and Second Streets.

Comfort Criterion Conditions

With the project, the average wind speed for the 51 test points would be 10.2 mph, representing an increase of 0.1 mph from the average of 10.1 mph under existing conditions. Wind speeds in the pedestrian areas would range from 6 to 15 mph. The project would add new exceedences of the pedestrian comfort criteria at six existing test locations (#9, 13, 14, 17, 19 and 58) and would four existing pedestrian-comfort criterion exceedences (#31, 33, 59 and 68). Winds at three of the six locations immediately adjacent to the project would be in excess of the Planning Code's 11 mph pedestrian-comfort criterion (#17, 19 and 58). Overall, wind speeds at 39 of the 51 points (#s 7, 8, 10, 16, 18, 21, 31-35, 40, 42, 43-57, 59-62, 64, 65, 67, 68, 81, 87, 89) would be at or less than the Planning Code's pedestrian-comfort criterion value of 11 mph. See Figure 1 and Table 1.

With the project, as compared to conditions at the existing locations, wind speeds would increase at 13 locations; remain unchanged at 24 locations; and decrease at 14 locations. Wind speeds of 14 mph or more would occur at 4 of the 51 test locations. The highest wind speed in the vicinity (15 mph) would occur at the northeast corner of the project, at the intersection of Howard and Second Streets (#17).

With the project, consequential wind speed decreases of 2 mph would occur at two locations (#7 and 32) downwind of the proposed building, at the intersection of Clementina Alley and Second Street and in Tehama Alley. Larger magnitude wind speed increases of 4 to 5 mph would occur at two locations (#16 and 17) immediately adjacent to the project at and slightly south of the intersection of Second and Howard Streets. Overall, decreases in wind speeds in the project vicinity would eliminate four existing exceedences (#31, 32, 59 and 68), while the increases would add six new exceedences of the pedestrian comfort criterion at existing locations.

At the six test points (#17-19, 21, 57 and 58) immediately surrounding the project site, wind speeds would range from 8 to 15 mph, three of which (18, 21 and 57) would be at or less than the pedestrian comfort criterion. As noted above, the highest wind speed in the vicinity (15 mph) would occur adjacent to project at the southwest corner of the intersection of Howard and Second Streets (#17). This would be an increase of 5 mph over the existing wind speed at this location. There would be a 7 mph increase in wind speed, the largest wind speed increase overall, which would occur at the southwest corner of the proposed building near the end of the pedestrian passage at Tehama Alley (#58).

Wind speeds would range from 7 mph to 15 mph at the twenty-nine locations (#9, 10, 13, 14, 16 -19, 31-34, 40-46, 59-61, 62, 64-67, 69 and 87) along Second Street between Minna and Harrison Streets. The highest wind speeds (13-15 mph) would occur on both sides of Second Street at the intersection of Second and

⁸ Heller Manus, Inc., concept plans, dated February 2, 2007. The tower has a roof height of 350 ft., with 20 ft. high mechanical penthouses that bring the top parapet height to 370 ft.

Howard Streets (#13, 14 and 17) and on the east side of the intersection of Second Street and Tehama Alley (#9). Winds at 22 of these twenty-nine locations (#10, 16, 18, 31-34, 40, 42-47, 59-62, 64, 65, 67 and 87) would be at or less than the pedestrian-comfort criterion.

Along New Montgomery Street from Natoma Street to Howard Street, wind speeds at the four measurement locations (#48, 74, 81 and 83) would range from 10 to 14 mph. Winds at 2 of the four locations (#48 and 81) would be at or less than the pedestrian-comfort criterion.

Along Natoma Street between New Montgomery Street and First Street, wind speeds at the seven measurement locations, (#44-47, 74, 83 and 87) which include the aforementioned Pacific Bell/SBC/AT&T Building, would range from 7 to 14 mph. Winds at 5 of the seven locations (#44-47, and 87) would be at or less than the pedestrian-comfort criterion.

Along Howard Street between Hawthorne Street and First Street, wind speeds at the seventeen measurement locations (#13, 14, 16, 17, 21, 48, 49-56, 68, 81 and 89) would range from 6 to 13 mph. Winds at 14 of the 17 locations (#16, 21, 48-56, 68, 81, and 89) would be at or less than the pedestrian-comfort criterion.

Along Tehama Street between Second Street and First Street, wind speeds at the seven measurement locations (#7-10, 19, 58 and 59) would range from 8 to 14 mph. Winds at 4 of the 7 locations (#7-9, and 59) would be at or less than the pedestrian-comfort criterion.

Along Clementina Street between Second Street and First Street wind speeds at the three measurement locations (#31, 32 and 35) would range from 9 to 11 mph. Winds at all 3 locations would meet the pedestrian-comfort criterion.

Along Folsom Street between Hawthorne Street and Second Street, wind speeds at the five measurement locations (#33, 34 and 61-63) would range from 7 to 14 mph. Winds at 4 of the 5 locations (#33, 34, 61 and 62) would be at or less than the pedestrian-comfort criterion.

Project Hazard Conditions

With the project in place, the Code's wind hazard criterion would not be exceeded at any pedestrian location tested in the vicinity of the project.

Discussion

Under Section 148 of the Planning Code, new buildings and additions to buildings may not cause ground-level winds to exceed the wind comfort criteria values more than ten percent of the time year round between 7:00 a.m. and 6:00 p.m. If existing wind speeds exceed the comfort level, new buildings and additions must be designed to reduce ambient wind speeds to meet the requirements. Section 148 also establishes a hazard criterion, which, as adjusted, is a 36 mph hourly-average equivalent wind speed for a full hour. Buildings may not cause winds that meet or exceed this criterion.

The siting of a large structure is expected to change wind flows, speeding up the wind at some locations and slowing it elsewhere in the vicinity. Even a moderate-size structure placed on this site can be expected to result in changes in the durations of criterion exceedences and changes in the locations at which those criterion exceedences occur. Experience indicates that for buildings in such windy areas it is common for new buildings to eliminate some existing exceedences and create others.



In this case, 10 pedestrian-comfort criterion exceedences occur under the existing conditions. In net, the project in the existing setting would add 2 pedestrian-comfort criterion exceedences for a total of 12 pedestrian-comfort criterion exceedences.

Discussion

Given the existing conditions of the site and vicinity and the magnitude of changes in wind conditions that can reasonably be expected, it may not be possible to design any structure that fully meets the goals of the project and which would fully reduce ambient wind speeds to meet Section 148 comfort criteria at all locations in the vicinity of the site. The addition of street trees at sidewalk locations at the project site, such as would be required of the project under Code Section 143, can serve to reduce wind comfort criterion exceedences. It cannot be assured, however, that the planting of large street trees would effectively reduce wind speeds at the identified exceedence locations.

The project would not add any new wind hazard criterion exceedences in the project vicinity at the locations tested.

TEST 3 - CUMULATIVE WIND IMPACTS

Project in the Cumulative Setting

The project in the cumulative setting scenario consists of the 222 Second Street project with the addition of the following buildings which have been proposed or for which entitlements have been obtained for development in the project vicinity:

| <u>Building</u> | <u>Height</u> |
|-------------------------------|---------------|
| • 201 Second Street | 19 Stories |
| • One Hawthorne Street | 25 Stories |
| • Palace Hotel Tower | 685 feet |
| • 50 First Street | 1,100 feet |
| • Transit Tower | 1,200 feet |
| • TJPA (Howard Street) | 800 feet |
| • 535 Mission Street | 380 feet |
| • 555 Mission Street | 500 feet |
| • 509 Howard (Foundry Square) | 500 feet |

For the cumulative scenario, the above-listed buildings were added to the project and existing setting scenario described under Test 2 (also see Figure 2).

Cumulative Comfort Criterion Conditions

With the project in the cumulative scenario, the average wind speed for the 51 test points would be 10 mph, representing a decrease of 0.1 mph from the average of 10.1 mph under existing conditions. Wind speeds in the pedestrian areas would range from 6 to 15 mph. The project under cumulative conditions would add new exceedences of the pedestrian comfort criteria at four existing test locations (#10, 18, 21 and 31) and would eliminate four existing pedestrian-comfort criterion exceedences (#41, 66, 69 and 83). Winds at four of the

six locations immediately adjacent to the project would be in excess of the Planning Code's 11 mph pedestrian-comfort criterion (#17-19, 21). Overall, wind speeds at 40 of the 51 points (#7, 8, 14, 16, 32-35, 40-57, 59-62, 64-69, 81, 83, 87, and 89) would be at or less than the Planning Code's pedestrian-comfort criterion value of 11 mph. See Figure 1 and Table 1.

With the project in the cumulative scenario, as compared to conditions at the existing locations, wind speeds would increase at 15 locations; remain unchanged at 9 locations; and decrease at 27 locations. Wind speeds of 14 mph or more would occur at 3 of the 51 test locations. The highest wind speed in the vicinity (16 mph) would occur along Second Street adjacent to the project, south of the intersection of Howard and Second Streets (#17).

With the project under cumulative conditions, consequential wind speed decreases of 3 mph would occur at 7 locations (#33, 34, 45, 46, 59, 74 and 83) downwind of the proposed building, at the intersections of Folsom and Second Streets, Tehama and Second Street, and Natoma and Second as well as upwind at the intersection of Natoma and New Montgomery near the 140 New Montgomery Street building. Larger magnitude wind speed increases of 5 to 8 mph would occur at three locations (#17, 57 and 58) immediately adjacent to the project at the corner of Howard and Second Streets and in the pedestrian passage between Howard and Tehama Streets at the western side of the building. Overall, wind speed decreases would eliminate seven existing exceedences (#33, 59, 41, 66, 68, 69 and 83), while increases would add 8 new exceedences of the pedestrian comfort criterion at existing locations.

At the six test points (#17-19, 21, 57 and 58) immediately surrounding the project site, wind speeds would range from 10 to 16 mph. Speeds at two locations (#16 and 57) would be at or less than the pedestrian comfort criterion. The highest wind speed among these sites (16 mph) would occur along Second Street adjacent to the project, south of the intersection of Howard and Second Streets (#17). This would be an increase of 6 mph over the existing wind speed at this location.

Wind speeds would range from 6 mph to 16 mph at the twenty-nine locations (#9, 10, 13, 14, 16 -19, 31-34, 40-46, 59-61, 62, 64-67, 69 and 87) along Second Street between Minna and Harrison Streets. The highest wind speeds (14-16 mph) would occur at the intersection of Tehama and Second Street and immediately adjacent to the project at and slightly south of the intersection of Second and Howard Streets (#17). Winds at 24 of these twenty-nine locations (#14, 16, 32-34, 40-47, 59-62, 64-67, 69 and 87) would be at or less than the pedestrian-comfort criterion.

Along New Montgomery Street from Natoma Street to Howard Street, wind speeds at the four measurement locations (#48, 74, 81 and 83) would range from 9 to 12 mph. Winds at 3 of the 4 locations (#48, 81 and 83) would be at or less than the pedestrian-comfort criterion.

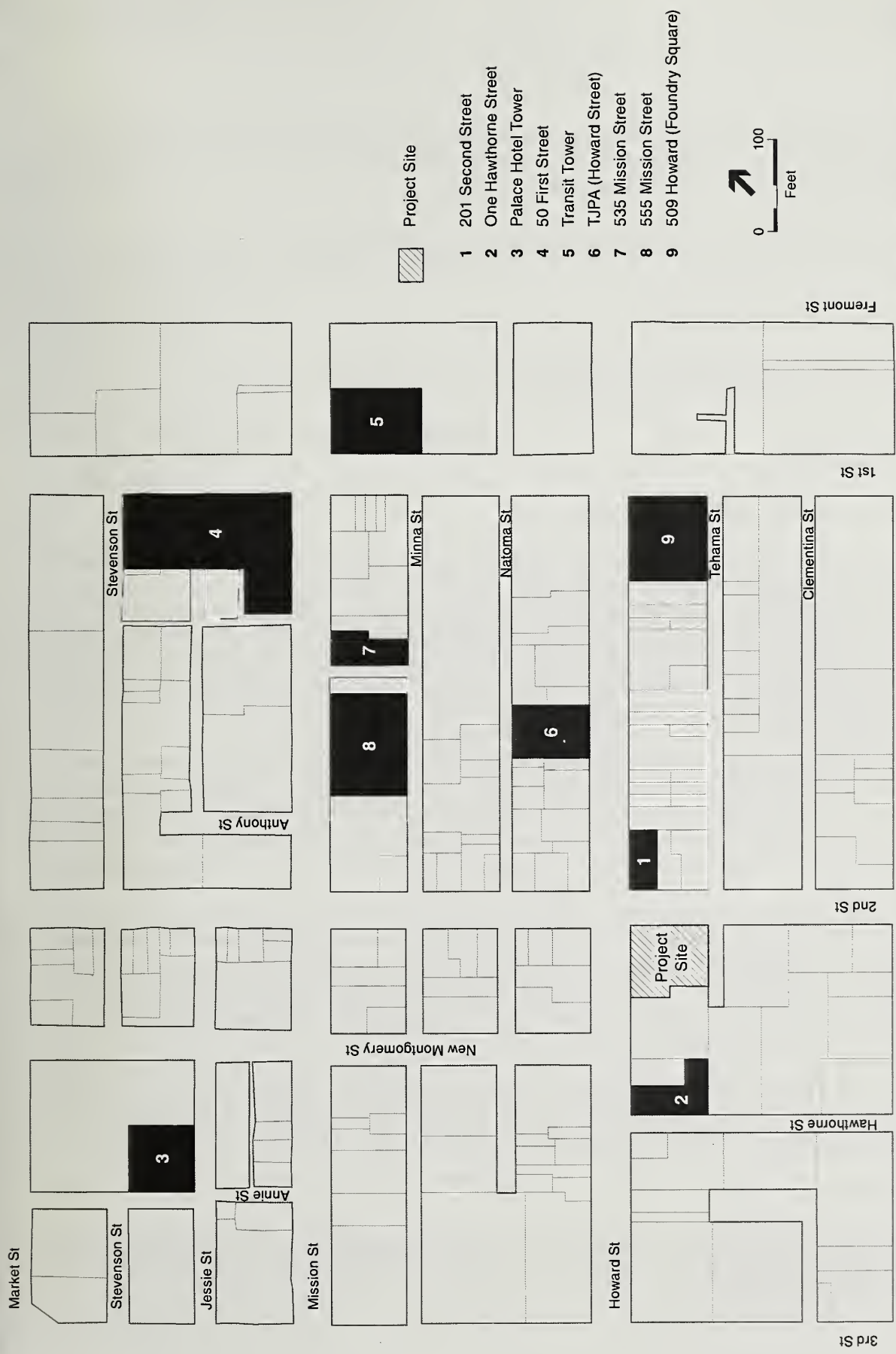
Along Natoma Street between New Montgomery Street and First Street, wind speeds at the seven measurement locations, (#44-47, 74, 83 and 87) would range from 6 to 12 mph. Winds at 6 of the 7 locations (#44, 45, 46, 47, 83 and 87) would be at or less than the pedestrian-comfort criterion.

Along Howard Street between Hawthorne Street and First Street, wind speeds at the seventeen measurement locations (#13, 14, 16, 17, 21, 48, 49-56, 68, 81 and 89) would range from 7 to 16 mph. Winds at 14 of the 17 locations (#14, 16, 48, 49, 50, 51, 52, 53, 54, 55, 56, 68, 81 and 89) would be at or less than the pedestrian-comfort criterion.



Along Tehama Street between Second Street and First Street, wind speeds at the seven measurement locations (#7-10, 19, 58 and 59) would range from 9 to 15 mph. Winds at 3 of the 7 locations (#7, 8 and 59) would be at or less than the pedestrian-comfort criterion.

Along Clementina Street between Second Street and First Street wind speeds at the three measurement locations (#31, 32 and 35) would range from 8 to 12 mph. Winds at 2 of the 3 locations (#32 and 35) would meet the pedestrian-comfort criterion.



Case No. 2006.1106E: 222 2nd Street (206337)

Figure 2

Buildings Considered under Cumulative Scenario

SOURCE: ESA



Along Folsom Street between Hawthorne Street and Second Street, wind speeds at the five measurement locations (#33, 34 and 61-63) would range from 8 to 13 mph. Winds at 4 of the 5 locations (#33, 34, 61 and 62) would be at or less than the pedestrian-comfort criterion.

Under the cumulative scenario, the project would increase the existing pedestrian-comfort criterion exceedences by 1, for a net total of 11 pedestrian-comfort criterion exceedences.

Cumulative Hazard Conditions

With the project in the cumulative scenario, the Code's wind hazard criterion would not be exceeded at any of the tested pedestrian locations in the project vicinity.

IV. SUMMARY

General Conditions and Comfort Criteria

Wind conditions in the general vicinity of the project site can be characterized as sheltered to moderately windy, and these are relatively typical of conditions in the vicinity of the project area. The average wind speed for all 51 existing setting test points is 10.1 mph. Wind speeds in pedestrian areas range from 6 to 15 mph. Wind speeds of 14 mph or more occur at 3 of the existing setting locations. The highest wind speed in the vicinity (15 mph) occurs at the southeast corner of the 26-story building at 140 New Montgomery Street, located mid-block between Mission and Howard Streets. Forty-one of the 51 points currently are at or less than the Planning Code's 11 mph pedestrian-comfort criterion.

With the project, the average wind speed for all 51 test points would increase to 10.2 mph. Wind speeds in pedestrian areas would range from 6 to 15 mph. Compared to existing conditions, wind speeds would increase at 13 locations; remain unchanged at 24 locations; and decrease at 14 locations. Wind speeds of 14 mph or more would occur at 4 of the total 51 pedestrian locations. The highest wind speed in the vicinity (15 mph) would occur at the northeast corner of the project, at the intersection of Howard and Second Streets.

With the project in the cumulative scenario, the average wind speed for all 51 test points would decrease to 10 mph. Wind speeds in pedestrian areas would range from 6 to 15 mph. Compared to existing conditions, wind speeds would increase at 15 locations; remain unchanged at 9 locations; and decrease at 27 locations. Wind speeds of 14 mph or more would occur at 3 of the total 51 pedestrian locations. The highest wind speed in the vicinity (16 mph) would occur along Second Street adjacent to the project, south of the intersection of Howard and Second Streets.

The project in the cumulative setting would add four new exceedences at existing test locations, and would eliminate four existing pedestrian-comfort criterion exceedences. Overall, wind speeds at 40 points would be at or less than the Planning Code's pedestrian-comfort criterion value of 11 mph.

Wind Hazard Conditions

The Code's wind hazard criterion of 36 mph is not currently exceeded at any of the 51 pedestrian locations in the vicinity of the project site. This condition would continue with the project in place in either the existing or cumulative setting.

February 29, 2008

Jessica Range
Major Environmental Analysis
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

**Subject: Case No. 2006.1106E
Wind Evaluation of Revised Project Design,
222 Second Street
ESA 206337**

Dear Ms. Range:

This letter evaluates the potential physical effects of the proposed new office building at 222 Second Street on the pedestrian wind environment in the vicinity. The project site is Lot 63, Assessor's Block 3735, which is on the southwest corner of the intersection of Howard and Second Streets on the block bounded by Howard, Second, Folsom and Hawthorne Streets in the City of San Francisco. The vacant site is located in an area dominated by mid-rise structures and scattered high-rise towers. The project applicant proposes to construct a 25-story, 350 foot office building on a parcel currently used as a surface parking lot. This letter compares the current project design with that of a 25-story, 350 foot office building (hereafter referred to as the 2007 design) for which wind-tunnel testing was performed on July 18, 2007 and, based on those findings, discusses the potential wind effects of the current project on pedestrian locations in the project vicinity.

I. Background

San Francisco Planning Code

City Planning Code Section 148, Reduction of Ground-Level Wind Currents in C-3 (Downtown Commercial) Districts and each of the ordinances regulating Rincon Hill, Van Ness Avenue, and South of Market areas [Sec. 148, 249.1(a)(3), 243(c)(8), 263.11(c)], require buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10% of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph for a single full hour of the year, or 0.011416% of the time. The wind ordinance comfort criteria are defined in terms of equivalent wind speed, which is an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence. Throughout this discussion, references to "wind speeds" are to equivalent wind speeds exceeded 10% of the time, unless otherwise stated.

The proposed project site is located within a C-3 district. It is therefore subject to Section 148, which provides criteria used to evaluate the project's environmental impact. For the purpose of determining compliance with Section 148 criteria, buildings with a height of more than 100 feet above ground usually would be evaluated by wind-tunnel testing, according to a standard wind testing protocol, to determine whether or not the project could contribute to existing exceedances of Section 148 wind criteria.

Jessica Range
February 29, 2008
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II. Project Description

The project site, 222 Second Street, was at the time of the 2007 design test and is currently a surface parking lot. The site occupies the southwest corner of the intersection of Howard and Second Streets on the block bounded by Howard, Second, Folsom and Hawthorne Streets. The 2007 design consisted of an irregularly shaped, eight-sided polyhedron in plan view with sheer facades (see Figure 1). The project sponsor still proposes to construct a 25-story, 350-foot-high building. However, the proposed project would have a rectangular shape incorporates 5-foot setbacks at regular intervals with increasing height (see Figure 2).

Figure 1. 2007 Design



Heller Manus, Inc., February 2, 2007.

Figure 2. Proposed Project



Heller Manus, Inc., February 11, 2008.

Topography of the Site and General Area

The project vicinity is relatively flat and level northward to the financial district and rises in elevation southward towards Rincon Hill, which begins its slope upward at Howard Street and rises to over 100 feet in elevation less than one-half mile from the project site to the southeast.¹

¹ All directions used in this memorandum relate to true north.

Jessica Range
February 29, 2008
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Existing Buildings in the Site Vicinity

More important than the topography, the buildings that lie upwind strongly affect the speed and direction of major winds that would otherwise reach the project site. Development in the immediate vicinity is characterized by mid-rise structures and scattered high-rise towers. In determining wind conditions, the more important high-rise buildings in the area include: the 30-story W Hotel and the 12-story Convention Plaza which occupy the northern and southern corners of the intersection of Howard and Third Streets, respectively; the 24 story "Pactel" building on New Montgomery Street; and the 26 story 101 Second Street building. On the project block and to the south, across Tehama Street, stands a 16-story residential tower (at 246 Second Street). To the north of the project site, across Howard Street, is a six-story building, followed by several mid-rise buildings as one approaches the financial district. Along Market and Mission Streets, a number of tall high-rise buildings form a substantial barrier to winds from the northwest and west-northwest.

III. Wind Environment and Effects of Project

Existing Wind Conditions

Average wind speeds in San Francisco are the highest in the summer and lowest in winter. However, the strongest peak winds occur in winter. The highest average wind speeds occur in the mid afternoon and the lowest in the early morning. Westerly to northwesterly winds are the most frequent and strongest winds during all seasons. Of the 16 primary wind directions, four have the greatest frequency of occurrence as well as the make up the majority of the strong winds; these are the northwest, west-northwest, west and west-southwest. Given the local topography and existing development in the vicinity, wind conditions at the project site can be characterized as sheltered to moderately windy, and these are relatively typical of conditions in the immediate vicinity of the project area.

Prior Wind Testing of the Project Site

Results of the July 18, 2007 test for 2007 design² included measurement of the existing conditions at the site, wind conditions with the then-proposed building present, and measurements of the wind effects of the building considering future development in the vicinity. Specifically, the cumulative setting scenario consisted of the 2007 design with the addition of the following buildings which had been proposed or for which entitlements have been obtained for development in the vicinity:

| <u>Building</u> | <u>Height</u> |
|------------------------|-------------------------------------|
| • 201 Second Street | 19 Stories |
| • One Hawthorne Street | 25 Stories (now under construction) |
| • Palace Hotel Tower | 685 feet |
| • 50 First Street | 1,100 feet |

² ESA. February 2007. *Potential Wind Conditions; Proposed 222 Second Street Development*. Technical Memorandum. Currently on file with the City of San Francisco Planning Department.

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- Transit Tower 1,200 feet
- TJPA (Howard Street) 800 feet
- 535 Mission Street 380 feet (now under construction)
- 555 Mission Street 500 feet (now under construction)
- 509 Howard (Foundry Square) 500 feet

The prior wind-tunnel test, conducted to investigate wind effects of the 2007 design under then-existing and cumulative development scenarios, can still be applied to characterize the effect of the proposed development on winds in the project vicinity.

Results of the July 18, 2007 test for the 2007 design indicated that it would increase wind speeds at 13 locations and reduce wind speeds at 14 locations, with wind speeds of 14 mph or more occurring at 4 of the 51 test locations. The highest wind speed in the vicinity (15 mph) would occur at the northeast corner of the project, at the intersection of Howard and Second Streets.

The 2007 design would eliminate four existing pedestrian-comfort criterion exceedences – one at Second and Clementina Streets, one at Folsom and Second Streets, one at Hawthorne and Howard Streets and one at Second and Tehama Streets. The 2007 design also would create six new pedestrian-comfort criterion exceedences at existing locations – four along Second Street near the intersection of Second and Howard Streets and one on Tehama Alley at the southwest corner of the project site. A total of 39 of the 51 test points would meet the Planning Code's pedestrian-comfort criterion of 11 mph.

Expected Wind Effects of the Revised Project

As previously mentioned, the size and scale of the revised project, at a height of 350 feet above the street, would not be taller than the previously tested project. Similarly, the two buildings are of comparable bulk. The main difference between the two designs is in terms of building shape. However, both designs exhibit features that would affect winds at ground level. The 2007 design included chamfered edges which would have served to facilitate wind flow around the building and reduce wind effects at ground level. The revised project design would incorporate 5-foot setbacks at regular intervals with increasing height. As a result of these features, strong winds that reach the upper portions of the tower and are then redirected down the face of the building would encounter and be further redirected by these setbacks. Consequently, the speed of such winds would likely be reduced by the time they reached the street level.

Given that both designs are similar in height and bulk, and that both have features that should mitigate adverse increases in wind speed at the ground level, wind speeds in the project vicinity with the proposed project in place should be similar to those measured during testing for the 2007 design. Prior testing for the 222 Second Street project revealed increased wind speeds of up to 15 mph at locations neighboring the project site. These wind speeds can be used as an upper threshold for assessing potential wind conditions.

Overall, I expect that wind speeds along the Howard, Tehama and Second Street sidewalks immediately adjacent to the project would increase slightly, as demonstrated in the 2007 design testing, but that winds would continue to meet the Planning Code's hazard criterion of 26 mph for a single hour of the year at all sidewalk locations.

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With the project in place, the average wind speed for future sidewalk locations on Howard, Tehama and Second Streets should be similar to those for the 2007 design, in the range of 7 to 15 mph.

Planning Code Sec. 143 requires planting of street trees in C-3 zones subsequent to new construction, including additions of gross floor area equal to 20% or more of the gross floor area of an existing building. The addition of street trees, which would provide wind calming at the pedestrian level along Howard and Second Streets, would tend to reduce wind speeds at sidewalk locations.

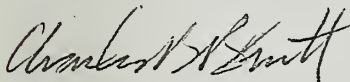
Furthermore, there is no reason to believe that the project would cause or contribute to an exceedance of the hazard criterion of the Planning Code on the public sidewalks in the vicinity.

IV. Conclusions

There appear to be no adverse effects on the wind environment that could result from the development of the proposed 222 Second Street project. As the previous study for a similar height and building design at the project site has demonstrated, the proposed new building is insufficient to generate adverse pedestrian-level winds given the nature of the built environment surrounding the proposed development. The ability of this project to have an effect on the wind environment is therefore minimal, and there is no reason to conclude that modification of the design of the project would improve the existing windy conditions that occur in the vicinity.

The conclusions of this evaluation should be considered to be definitive; I believe that further wind-tunnel testing of this project is unwarranted. If you have any questions about this evaluation, please feel free to contact me. I can be reached at (415) 896-5900.

Sincerely,



Charles B. Bennett
Senior Project Manager



Joshua M. Schnabel
Senior Associate

January 7, 2010

Michael Jacinto
Major Environmental Analysis
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Subject: Case No. 2006.1106E—Wind Evaluation of Revised Project Design, 222 Second Street (ESA 206337)

Dear Michael:

This letter evaluates the potential physical effects of the proposed new office building at 222 Second Street on the pedestrian wind environment in the vicinity. The project site is Lot 63, Assessor's Block 3735, which is on the southwest corner of the intersection of Howard and Second Streets on the block bounded by Howard, Second, Folsom and Hawthorne Streets in the City of San Francisco. The vacant site is located in an area dominated by mid-rise structures and includes scattered high-rise towers. The project applicant proposes to construct a 26-story, 350 foot office building on a parcel currently used as a surface parking lot. This letter compares the current project design (hereinafter referred to as the Revised Project) with that of a 25-story, 350 foot office building (hereafter referred to as the 2007 design) for which wind-tunnel testing was performed on July 18, 2007, and, based on those findings, discusses the potential wind effects of the current project on pedestrian locations in the project vicinity. (This letter supersedes our letter of February 29, 2008, which compared an earlier revised project design to the 2007 design.)

I. Background

San Francisco Planning Code

City Planning Code Section 148, Reduction of Ground-Level Wind Currents in C-3 (Downtown Commercial) Districts and each of the ordinances regulating Rincon Hill, Van Ness Avenue, and South of Market areas [Sec. 148, 249.1(a)(3), 243(c)(8), 263.11(c)], require buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10% of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph for a single full hour of the year. The wind ordinance comfort criteria are defined in terms of equivalent wind speed, which is an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence. Throughout this discussion, references to "wind speeds" are to equivalent wind speeds exceeded 10% of the time, unless otherwise stated.

The proposed project site is located within a C-3 district. It is therefore subject to Section 148, which provides criteria used to evaluate the project's environmental impact. For the purpose of determining compliance with Section 148 criteria, buildings with a height of more than 100 feet above ground usually would be evaluated by wind-tunnel testing, according to a standard wind testing protocol, to determine whether or not the project could contribute to existing exceedances of Section 148 wind criteria.

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January 7, 2010
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II. Project Description

The project site, 222 Second Street, was at the time of the 2007 design test and is currently a surface parking lot. The site occupies the southwest corner of the intersection of Howard and Second Streets on the block bounded by Howard, Second, Folsom and Hawthorne Streets. The 2007 design consisted of an irregularly shaped, eight-sided polyhedron in plan view with sheer facades (see Figure 1). The project sponsor still proposes to construct a 350-foot-tall building. However, the proposed project would have a rectangular shape would incorporate setbacks above the building base and between the lower and upper towers. The Revised Project design would be rectilinear in plan but would incorporate setbacks at two different heights: at the fifth floor, at a height of approximately 60 feet above grade, the north façade of the building would be set back 5 feet from Howard Street and the west façade would be set back 19.5 feet from the westerly property line. At the 17th story (about 220 feet above grade), the east façade would be set back 24.5 feet from Second Street, and the south façade would be set back 44.5 feet from Tehama Street. In addition, the fifth floor would include an additional 5-foot recess, or “reveal,” on all four facades (see Figure 2).



Heller Manus Architects, June 2007.

Figure 1. 2007 Design



Heller Manus Architects, December 2009.

Figure 2. Proposed Project

Topography of the Site and General Area

The project vicinity is relatively flat and level northward to the financial district and rises in elevation southward towards Rincon Hill, which begins its slope upward at Howard Street and rises to over 100 feet in elevation less than one-half mile from the project site to the southeast.¹

Existing Buildings in the Site Vicinity

More important than the topography, the buildings that lie upwind strongly affect the speed and direction of major winds that would otherwise reach the project site. Development in the immediate vicinity is characterized by mid-rise structures and scattered high-rise towers. In determining wind conditions, the more important high-rise buildings in the area include: the 30-story W Hotel and the 12-story Convention Plaza which occupy the northern and southern corners of the intersection of Howard and Third Streets, respectively; the 24 story former Pacific Telephone building on New Montgomery Street; and the 26 story 101 Second Street building. On the project block and to the south, across Tehama Street, stands a 16-story residential tower (at 246 Second Street). To the north of the project site, across Howard Street, is a six-story building, followed by several mid-rise buildings as one approaches the financial district. Along Market and Mission Streets, a number of tall high-rise buildings form a substantial barrier to winds from the northwest and west-northwest.

III. Wind Environment and Effects of Project

Existing Wind Conditions

Average wind speeds in San Francisco are the highest in the summer and lowest in winter. However, the strongest peak winds occur in winter. The highest average wind speeds occur in the mid afternoon and the lowest in the early morning. Westerly to northwesterly winds are the most frequent and strongest winds during all seasons. Of the 16 primary wind directions, four have the greatest frequency of occurrence as well as the make up the majority of the strong winds; these are the northwest, west-northwest, west and west-southwest. Given the local topography and existing development in the vicinity, wind conditions at the project site can be characterized as sheltered to moderately windy, and these are relatively typical of conditions in the immediate vicinity of the project site.

Prior Wind Testing of the Project Site

Results of the July 18, 2007, test for 2007 design² included measurement of the existing conditions at the site, wind conditions with the then-proposed building present, and measurements of the wind effects of the building considering future development in the vicinity. Specifically, the cumulative setting scenario consisted of the 2007 design with the addition of the following buildings which had been proposed or for which entitlements have been obtained for development in the vicinity:

¹ All directions used in this memorandum relate to true north.

² ESA. February 2007. *Potential Wind Conditions; Proposed 222 Second Street Development*. Technical Memorandum. This report is on file and available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1106E.

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| <u>Building</u> | <u>Height</u> |
|-------------------------------|-------------------------------------|
| • 201 Second Street | 19 Stories |
| • One Hawthorne Street | 25 Stories (now nearing completion) |
| • Palace Hotel Tower | 685 feet |
| • 50 First Street | 1,100 feet |
| • Transit Tower | 1,200 feet |
| • TJPA (Howard Street) | 800 feet |
| • 535 Mission Street | 380 feet |
| • 555 Mission Street | 500 feet |
| • 509 Howard (Foundry Square) | 500 feet |

The prior wind-tunnel test, conducted to investigate wind effects of the 2007 design under then-existing and cumulative development scenarios, can still be applied to characterize the effect of the proposed development on winds in the project vicinity.

Results of the July 18, 2007, test for the 2007 design indicated that it would increase wind speeds at 13 locations and reduce wind speeds at 14 locations, with wind speeds of 14 mph or more occurring at 4 of the 51 test locations. The highest wind speed in the vicinity (15 mph) would occur at the northeast corner of the project, at the intersection of Howard and Second Streets.

The 2007 design would eliminate four existing pedestrian-comfort criterion exceedances – one at Second and Clementina Streets, one at Folsom and Second Streets, one at Hawthorne and Howard Streets and one at Second and Tehama Streets. The 2007 design also would create six new pedestrian-comfort criterion exceedances at existing locations – four along Second Street near the intersection of Second and Howard Streets and one on Tehama Alley at the southwest corner of the project site. A total of 39 of the 51 test points would meet the Planning Code's pedestrian-comfort criterion of 11 mph.

Expected Wind Effects of the Revised Project

As previously mentioned, the size and scale of the Revised Project, at a height of 350 feet above the street, would not be taller than the previously tested project. Similarly, the two buildings are of comparable bulk. The main difference between the two designs is in terms of building shape. However, both designs exhibit features that would affect winds at ground level. The 2007 design included chamfered edges which would have served to facilitate wind flow around the building and reduce wind effects at ground level. The Revised Project design would be rectilinear in shape but would incorporate setbacks at two different heights: at the fifth floor, at a height of approximately 60 feet above grade, the north façade of the building would be set back 5 feet from Howard Street and the west façade would be set back 19.5 feet from the westerly property line. At the 17th story (about 220 feet above grade), the east façade would be set back 24.5 feet from Second Street, and the south façade would be set back 44.5 feet from Tehama Street. In addition, the fifth floor would include an additional 5-foot recess, or "reveal," on all four facades. As a result of these features, strong winds that reach the upper portions of the tower and are then redirected down the face of the building would encounter and be slowed by these setbacks. Consequently, the speed of such winds would likely be reduced by the time they reached the street level.

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January 7, 2010
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Given that both designs are similar in height and bulk, and that both have features that should mitigate adverse increases in wind speed at the ground level, wind speeds in the project vicinity with the proposed project in place should be similar to those measured during testing for the 2007 design. Prior testing for the 222 Second Street project revealed increased wind speeds of up to 15 mph at locations neighboring the project site. These wind speeds can be used as an upper threshold for assessing potential wind conditions.

Overall, I expect that wind speeds along the Howard, Tehama and Second Street sidewalks immediately adjacent to the project would increase slightly, similar to the increases measured in the 2007 design testing, but that winds would continue to meet the Planning Code's hazard criterion of 26 mph for a single hour of the year at all sidewalk locations. With the project in place, the average wind speed for future sidewalk locations on Howard, Tehama and Second Streets should be similar to those for the 2007 design, in the range of 7 to 15 mph.

Planning Code Sec. 143 requires planting of street trees in C-3 zones subsequent to new construction, including additions of gross floor area equal to 20% or more of the gross floor area of an existing building. The addition of street trees, which would provide wind calming at the pedestrian level along Howard and Second Streets, would tend to reduce wind speeds at sidewalk locations.


Furthermore, there is no reason to believe that the project would cause or contribute to an exceedance of the hazard criterion of the Planning Code on the public sidewalks in the vicinity.

IV. Conclusions

There appear to be no adverse effects on the wind environment that could result from the development of the proposed 222 Second Street project. As the previous study for a similar height and building design at the project site has demonstrated, the proposed new building appears insufficient to generate hazardous pedestrian-level winds given the nature of the built environment surrounding the proposed development. The ability of this project to have an effect on the wind environment is relatively modest, and there is no reason to conclude that modification of the design of the project would improve the existing windy conditions that occur in the vicinity.

The conclusions of this evaluation should be considered to be definitive; I believe that further wind-tunnel testing of this project is unwarranted. If you have any questions about this evaluation, please feel free to contact me. I can be reached at (415) 896-5900.

Sincerely,



Charles B. Bennett
Senior Managing Associate

CHAPTER VIII

EIR Authors and Consultants

EIR Authors

San Francisco Planning Department
Major Environmental Analysis
1650 Mission Street, Suite 400
San Francisco, California 94103
Environmental Review Officer: Bill Wycko
EIR Coordinator: Michael Jacinto
EIR Supervisor: Sarah B. Jones

EIR Consultants

Environmental Science Associates (Prime Consultant)

225 Bush Street, Suite 1700

San Francisco, California 94104-4207

Project Manager: Karl F. Heisler

Participants: Katherine Abell

Chuck Bennett

Ron Foster

Jack Hutchison, P.E.

Elizabeth Kanner

Lesley Lowe, AICP

Anthony Padilla

Ricardo Ramirez

Chris Sanchez

Joshua Schnabel

Tania Sheyner, AICP, LEED® AP

Amy Skewes-Cox, AICP

Ron Teitel

David Toy

Linda Uehara

Yanwu Zhou

William Self Associates (Archeology)

P.O. Box 2192

61 D Avenida de Orinda

Orinda, CA 94563

Bruce R. White (Wind)

3207 Shelter Cove

Davis, CA 95616-2627

Project Sponsor

Tishman Speyer

One Bush Street, Suite 400

San Francisco, CA 94104

Sponsor's Attorney

Reuben & Junius

One Bush Street, Suite 600

San Francisco, CA 94104

Project Designer

Thomas Phifer and Partners

180 Varick Street, 11th Floor

New York, NY 10014

Project Architect

Heller Manus Architects

221 Main Street

San Francisco, CA 94105

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San Francisco Planning Department
Major Environmental Analysis
1650 Mission Street, Suite 400
San Francisco, California 94103

Attn: Michael Jacinto, EIR Coordinator
2006.1106E—222 Second Street Project

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